# Amphibian and Reptile Survey
# on the
# Bureau of Land Management
# Lewistown District: 1995 – 1998

Final Report to:

Bureau of Land Management

Lewistown District
80 Airport Road
Lewistown, MT 59457

*Submitted by:*

Michael D. Roedel And Paul Hendricks

December 1998

Montana Natural Heritage Program
1515 East Sixth Avenue
Helena, MT 59620-1800

This document should be cited as follows:

Roedel, M. D. and D. P. Hendricks. 1998. Amphibian and Reptile Survey on the Bureau of Land Management Lewistown District: 1995 - 1998. Montana Natural Heritage Program. Helena, MT. 75 pp.

## ABSTRACT

From 1995 through 1998, surveys for amphibians and reptiles (herps) were conducted by Montana Natural Heritage Program biologists on 340 sites in the Bureau of Land Management Lewistown District in north central Montana. A total of 102 site surveys were made during the contract period of 1997 - 1998. An additional 238 sites were surveyed for herps within the same area in conjunction with 1995 - 1996 colonial waterbird surveys. Those observations have been included in this report.

Localized areas across the entire region were covered in the surveys. The majority of the surveys of ponds, lakes, seeps, streams or other wetlands were conducted by one individual. Each survey took from 5 to 420 person-minutes and consisted of a thorough search of the wetland perimeter in combination with netting of near shore aquatic habitats for adults, eggs, larvae, and tadpoles. Stream sampling was done by hand and dipnet. At seeps, rocks and logs were overturned in and near wet areas to expose hidden specimens. In addition to surveys, observations of road kills were recorded, as were identified calls and fortuitous sightings by those conducting the surveys or other reliable individuals.

During 1995 - 1998, eleven amphibian and twelve reptile species were detected within the Lewistown District survey area. Those species included: Long-toed Salamander (Ambystoma macrodactylum), Tiger Salamander (Ambystoma tigrinum), Tailed Frog (Ascaphus truei), Western Toad (Bufo boreas), Great Plains Toad (Bufo cognatus), Canadian Toad (Bufo hemiophrys), Woodhouse's Toad (Bufo woodhousii), Western Chorus Frog (Pseudacris triseriata), Plains Spadefoot (Spea bombifrons), Northern Leopard Frog (Rana pipiens), Spotted Frog (Rana luteiventris), Short-horned Lizard (Phrynosoma hernandesi), Sagebrush Lizard (Sceloporus graciosus), Painted Turtle (Chrysemys picta), Spiny Softshell (Trionyx spiniferus), Rubber Boa (Charina bottae), Racer (Coluber constrictor), Western Hognose Snake (Heterodon nasicus), Gopher Snake Or Bullsnake (Pituophis catenifer), Western Rattlesnake (Crotalus viridis), Common Garter Snake (Thamnophis sirtalis), Western Terrestrial Garter Snake (Thamnophis elegans), and Plains Garter Snake (Thamnophis radix). The site surveys during the same period revealed nine amphibian species and five reptile species.

Historical records and earlier surveys indicated the presence of two additional species within the study that were not encountered during the 1996 - 1998 surveys: Bullfrog (Rana catesbeiana) and Milk Snake (Lampropeltis triangulum).

**TABLE OF CONTENTS**

## ACKNOWLEDGEMENTS

We thank K. Werner and B. Maxell for conducting site surveys, M. Miller for data entry, J. Hinshaw for data retrieval, and C. Jones for mapping occurrences.

Financial support for the project came from the Bureau of Land Management and the Montana Natural Heritage Program (Montana State Library, Natural Resources Information System and The Nature Conservancy). Thanks to Michelle Williams (BLM) for her interest, encouragement, and support with this project.

Museum records were received from: American Museum of Natural History, Academy of Natural Science, Brigham Young University, California Academy of Science, Carnegie Museum, University of Puget Sound Museum, Field Museum of Natural History, Glacier National Park Museum, Illinois Natural History Survey, University of Kansas, Los Angeles County Museum, Louisiana State University Museum of Zoology, Museum of Comparative Zoology - Harvard, Milwaukee Public Museum, Montana State University Museum, Michigan State University Museum, North Carolina State Museum of Natural History, Northern Louisiana University Museum, University of Colorado Museum, University of Georgia Museum of Natural History, University of Idaho Museum, University of Michigan Museum, University of South Dakota, United States National Museum of Natural History, University of Texas - Arlington, University of Texas - El Paso, and Peabody Museum - Yale. Most museum data were received with the help of Dr. Charles Peterson, Idaho State University, Pocatello.

Jim Reichel, MTNHP Zoologist, died prior to the completion of this project. Jim was instrumental in organizing this project and conducting a series of amphibian and reptile surveys across Montana, the first comprehensive inventory in three decades. This report represents one of a series of projects that contribute to a baseline inventory of the entire state.

## INTRODUCTION

Many amphibians are apparently declining in the western U.S. and world-wide. Acid rain, ozone depletion, pollution by toxic chemicals and heavy metals, predation and/or competition by exotic species, habitat alteration, climatic changes, disease, immune system problems, and combinations of several of these factors have all been suggested as possible causes (Corn and Fogelman 1984, Phillips 1990, Yoffe 1992).

Preliminary data indicate that the Northern Leopard Frog (Rana pipiens) has disappeared over much of its former range in western Montana and is declining in at least some areas of eastern Montana. Status and population trends of several toad species (Bufo spp.) are unknown, although declines of the Western Toad (Bufo boreas) have recently been reported in northern Idaho (C. Peterson pers. comm.), northwestern Montana (Werner and Reichel 1994), Yellowstone National Park (Koch and Peterson 1995) and Colorado (Carey 1993). The Western Toad in likely to be reclassified in the near future as Sensitive by Region I of the U.S. Forest Service (B. Maxell, pers. comm.). Land-use practices, such as large-scale logging, continue to be detrimental to resident herpetofauna in some regions of the western U.S. (Bury et al. 1991), while the impacts of grazing on amphibians and reptiles and their habitats remain poorly studied and understood. Heavy grazing in and around breeding waters may also negatively impact amphibians and reptiles living in riparian and wetland sites by 1) eliminating emergent vegetation necessary for egg and larval survival, 2) lowering water quality, especially causing high siltation levels, 3) soil compaction and trampling of turtle eggs, and 4) trampling of other eggs, larvae and adults. Additionally, "improving" seeps and springs for livestock watering may make them unavailable to breeding amphibians.

The Montana Natural Heritage Program currently (1998) lists five amphibian and five reptile species as Animal Species of Special Concern. Of these, one amphibian and four reptiles are presently known to occur in or near the region of focus in this report. They are: Northern Leopard Frog (Rana pipiens), Snapping Turtle (Chelydra serpentina), Spiny Softshell (Trionyx spiniferus), Western Hognose Snake (Heterodon nasicus), and Smooth Green Snake (Liochlorophis vernalis)

Particular attention was focused on a group of species in conducting these surveys because of special interest: Smooth Green Snake, Bullfrog, Wood Frog, Woodhouse's Toad, and Great Plains Toad. Of these, Woodhouse's Toad, and Great Plains Toad, were observed in the area.

## METHODS

The BLM's Lewistown District in north central Montana was surveyed during this 1995 - 1998 inventory.

Historical locations of amphibians and reptiles were recorded from literature (see Bibliography) and museum specimen records. Records were received from over 20 major North American museums that have computerized their collection records (see Acknowledgments). Locations derived from these sources have been entered into a database and digitized. Distribution maps were created using survey and sighting data and historical records, including museum specimens.

Survey sites were chosen based on 3 criteria: 1) high priority sites as determined by the BLM; 2) location of streams, seeps and wetlands on topographic maps; and 3) accessibility of the wetlands by roads. Based on the above, between three and eight sites per observer were chosen daily for surveys. From five to 420 minutes was spent at each site (with an average survey time of 37 minutes), depending upon the size of the area and what was found. Initially, the entire shoreline, or a major part thereof, was searched by walking slowly along the edge and up into the surrounding vegetation, including rolling over rocks and logs. At regular intervals, the aquatic habitat was sampled for tadpoles or larvae using dipnets. If the initial sampling showed amphibian/reptile species present, further effort was expended in order to get a more comprehensive view of abundance and distribution.

An attempt was made to capture at least the first few individuals of a species seen at a survey site. The species name was recorded along with developmental stage and sex (if possible); the animals were then released. On occasion, representative samples of the more common species in an area were preserved for permanent museum records and will be deposited at the Idaho State University Museum. Water temperature, air temperature, and a general description of the area were recorded. Standard data sheets were used during this project; the amphibian survey data sheet was developed by U.S. Fish and Wildlife Service and is used extensively by a variety of researchers in the western U.S. Much site-specific data was gathered during these surveys; not all data has been analyzed or is presented in this report, but is available from the Montana Natural Heritage Program.

## RESULTS AND DISCUSSION

A total of 340 sites was surveyed during the months of May, June, July, and October from 1995 through 1998. Surveys were carried out at 102 sites during 1997 – 1998, while an additional 238 sites were surveyed for herps within the same area in conjunction with 1995 – 1996 colonial waterbird surveys (see Reichel, 1996). Localized areas across the entire region were covered in the surveys. Of the total 340 sites, 232

(68%) had one or more amphibian or reptile species present (Appendix 1). During the 1996 – 1998 site surveys, 83 of the 102 sites (81%) had one or more amphibian or reptile species present. Although no species of amphibians or reptiles were found at 108 sites, their absence may have been due to the time of day, weather conditions, or other factors at the time of sampling.

Many of the 1995 surveys were done in an intensive focused manner, with the survey sites identified as all wetland sites within a randomly chosen USGS 7.5 minute quad. This sampling method helped set the parameters for the search pattern for a more wide-spread survey plan (see Reichel, 1996). Survey time ranged from 5 to 420 minutes (mean = 37 min., sum 12,260 min.) across all surveys, while survey time during the 1997 – 1998 surveys ranged from 10 to 180 minutes (mean = 50 min., sum 4,869 min.). Appendix 1 includes 1995 – 1998 herp survey site survey information within the BLM Lewistown district. Surveys are indexed by County, township, range, section, and quarter section. Species detected at each site are listed, as is the survey date, start time, survey duration (in minutes), elevation of site, approximate wetland area (square meters), site name, and applicable notes.

During 1995 - 1998, eleven amphibian and twelve reptile species were detected within the Lewistown District survey area. Those species included: Long-toed Salamander (Ambystoma macrodactylum), Tiger Salamander (Ambystoma tigrinum), Tailed Frog (Ascaphus truei), Western Toad (Bufo boreas), Great Plains Toad (Bufo cognatus), Canadian Toad (Bufo hemiophrys), Woodhouse's Toad (Bufo woodhousii), Western Chorus Frog (Pseudacris triseriata), Plains Spadefoot (Spea bombifrons), Northern Leopard Frog (Rana pipiens), Columbia spotted Frog (Rana luteiventris), Short-horned Lizard (Phrynosoma hernandesi), Sagebrush Lizard (Sceloporus graciosus), Painted Turtle (Chrysemys picta), Spiny Softshell (Trionyx spiniferus), Rubber Boa (Charina bottae), Racer (Coluber constrictor), Western Hognose Snake (Heterodon nasicus), Gopher Snake Or Bullsnake (Pituophis catenifer), Western Rattlesnake (Crotalus viridis), Common Garter Snake (Thamnophis sirtalis), Western Terrestrial Garter Snake (Thamnophis elegans), and Plains Garter Snake (Thamnophis radix). The site surveys during the same period revealed nine amphibian species and five reptile species (see table 1, table 2).

No more than four species were detected at any one site. There were four species detected at four sites; three species at eight sites; two species at 64 sites; and a single species at 164 sites. Western Chorus Frog was the herp detected most often during the surveys, with 167 records, or 49% of the surveys. Northern Leopard Frog was detected at 39 sites, or during 12% of the surveys. Plains Garter Snake ranked third in number of detections, with 37 observations, or on 11% of the surveys.

Sagebrush Lizard was reported for the first time at one location within the Lewistown district during the 1995 - 1998 period. It was not, however, detected on any surveys of the area. Rubber Boa was detected only once during the period and only once previously within the area. Two species, Bullfrog and Milk Snake, had been observed within the survey area in years previous to the surveys, but neither were detected in the

area during 1995 - 1998. Great Plains Toad, which has two historical records in the area, was recorded at two locations. However, one record from a site survey has not yet been confirmed and is based on a specimen of a very young tadpole. Of the species observed historically in the area, but not during these surveys: The Bullfrog is not native to the area, but had been reported on one previous occasion. Milk Snake had been observed on at least four occasions prior to 1995.

Individual species observation tables for amphibians and reptiles on the Lewistown District follow (table 1, table 2). For individual species description, habitat and habit, status information, and state range maps, see Reichel and Flath (1995).

Table 1. Amphibian site records from the Lewistown district in Montana Natural Heritage Program databases.

| Common Name | Species Name | Pre 1995 | 1995-96 all records | 1995-96 surveys | 1997-96 all records | 1997-98 surveys | Total records |
|---|---|---|---|---|---|---|---|
| Long-toed Salamander | *(Ambystoma macrodactylum)* | 12 | 4 | 3 | 0 | 0 | 16 |
| Tiger Salamander | *(Ambystoma tigrinum)* | 31 | 22 | 14 | 7 | 7 | 60 |
| Tailed Frog | *(Ascaphus truei)* | 12 | 6 | 0 | 1 | 0 | 19 |
| Western Toad | *(Bufo boreas)* | 55 | 12 | 2 | 2 | 2 | 69 |
| Great Plains Toad | *(Bufo cognatus)* | 2 | 0 | 0 | 2 | 1? | 4 |
| Canadian Toad | *(Bufo hemiophrys)* | 0 | 1 | 0 | 0 | 0 | 1 |
| Woodhouse's Toad | *(Bufo woodhousii)* | 8 | 14 | 2 | 6 | 1 | 28 |
| Western Chorus Frog | *(Pseudacris triseriata)* | 45 | 165 | 114 | 94 | 53 | 304 |
| Plains Spadefoot | *(Spea bombifrons)* | 6 | 4 | 3 | 4 | 2 | 14 |
| Bullfrog | *(Rana catesbeiana)* | 1 | 0 | 0 | 0 | 0 | 1 |
| Northern Leopard Frog | *(Rana pipiens)* | 39 | 25 | 19 | 36 | 20 | 100 |
| Columbia Spotted Frog | *(Rana luteiventris)* | 70 | 36 | 12 | 20 | 10 | 126 |
| **Total records** | **12 Species** | **281** | **289** | **169** | **172** | **96** | **742** |

Table 2. Reptile site records from the Lewistown district in Montana Natural Heritage Program databases.

| Common Name | Species Name | Pre 1995 | 1995-96 all records | 1995-96 surveys | 1997-98 all records | 1997-98 surveys | Total records |
|---|---|---|---|---|---|---|---|
| Short-horned Lizard | *(Phrynosoma hernandesi)* | 7 | 2 | 0 | 1 | 0 | 10 |
| Sagebrush Lizard | *(Sceloporus graciosus)* | 0 | 1 | 0 | 0 | 0 | 1 |
| Painted Turtle | *(Chrysemys picta)* | 7 | 17 | 2 | 6 | 1 | 37 |
| Spiny Softshell | *(Trionyx spiniferus)* | 1 | 4 | 0 | 4 | 0 | 9 |
| Rubber Boa | *(Charina bottae)* | 1 | 0 | 0 | 1 | 0 | 2 |
| Racer | *(Coluber constrictor)* | 9 | 7 | 0 | 18 | 4 | 34 |
| Western Hognose Snake | *(Heterodon nasicus)* | 6 | 1 | 0 | 1 | 0 | 8 |
| Milk Snake | *(Lampropeltis triangulum)* | 4 | 0 | 0 | 0 | 0 | 4 |
| Gopher Snake Or Bullsnake | *(Pituophis catenifer)* | 11 | 12 | 0 | 22 | 0 | 45 |
| Western Rattlesnake | *(Crotalus viridis)* | 31 | 22 | 0 | 21 | 0 | 74 |
| Common Garter Snake | *(Thamnophis sirtalis)* | 24 | 1 | 1 | 3 | 1 | 28 |
| Western Terrestrial Garter Snake | *(Thamnophis elegans)* | 49 | 19 | 1 | 19 | 0 | 87 |
| Plains Garter Snake | *(Thamnophis radix)* | 19 | 25 | 17 | 31 | 20 | 75 |
| **Total records:** | **13 Species** | **169** | **111** | **21** | **127** | **26** | **414** |

**Species Present and Potential Species on the Lewistown District**

**Long-toed Salamander** (*Ambystoma macrodactylum*) **AAAAA01080**

Description: Adults are dark gray to black with an irregular (and sometimes broken) green to yellow stripe down the middle of the back. Adult snout-vent length varies from 2 to 3.25". All salamanders have smooth moist skin without scales.

*Eggs and Larvae*: Egg masses are typically laid in small clusters of 5-100 eggs but may be laid singly (Nussbaum *et al.* 1983); egg masses are typically attached to underwater vegetation or submerged branches. Within the clear gelatinous eggs, the embryos are somewhat light-colored, while frog and toad embryos are dark (except in Tailed Frogs). Larval Long-toed Salamanders are typically brown- or gray-colored, are found in ponds, have three external gills, and are relatively small (<1.75" snout-vent) and slender. They are distinguished from Tiger Salamander larvae by the 9-13 gill rakers on the inside of the 3rd gill arch (17-22 rakers on the Tiger Salamander); they are also smaller and lack the large head and mouth.

Similar species: Adult Long-toed Salamanders can be distinguished from Coeur d'Alene Salamanders by the longest toe on the hind foot which is longer than the sole and a yellow throat patch. Long-toed Salamanders lack a groove running vertically from nostril to mouth.

Habitat and Habits: Long-toed Salamanders are found in a variety of habitats from sagebrush to nearly alpine. They breed in ponds or lakes (very rarely in slow moving streams), usually those without fish present. Adults go to the breeding ponds immediately after snow-melt and are usually the earliest breeding amphibians in western Montana. In the Pacific Northwest, eggs hatch in 3-6 weeks and metamorphosis occurs after 2-14 months (Nussbaum *et al.* 1983, Leonard *et al.* 1993). Individuals were found in the Rocky Mountains and the Elkhorn Mountains from 4350 - 7050 ft. elevation in a survey of the Helena National Forest (Reichel 1996).

Surveying: Larvae can readily be seen in ponds during the day and sampled with a dipnet; egg masses are somewhat harder to see. During the breeding season, adults may also be seen in the water, particularly during night surveys. During the rest of the spring, summer and fall, adults may occasionally be found in and under logs on the forest floor. Metamorphosed individuals are active at night, particularly when it is warm and rainy; they may be captured at this time by either night searches or pitfall traps.

Status: The Long-toed Salamander is the most common salamander in western Montana. The Long-toed Salamander is also found in the northwestern part of the Elkhorns, the farthest east reported location in its range. The Elkhorns are the only isolated mountain range east of the Continental Divide where this species is found (Reichel 1995a).

Montana Natural Heritage Program rank: G5 S5.

**Tiger Salamander** (*Ambystoma tigrinum*) **AAAAA01140**

Description: Adults have smooth moist skin with a highly variable color pattern; usually the background color is dark, with lighter blotches of yellow, tan or green. The adult is large and heavy-bodied with a snout to vent length of 3-6". Adult Tiger Salamanders can be separated from other Montana species by: 1) their large size and heavy body; and 2) two prominent tubercles on the bottom of each hind foot.

*Eggs and Larvae*: Egg masses are typically laid in small clusters of 5-120, but may be laid singly (Nussbaum *et al*. 1983, Leonard *et al*. 1993). They are usually attached to vegetation and placed 2-10" below the surface of the water (Hammerson 1982a). Larval Tiger Salamanders are typically pale green or brown-colored, though those living in bentonite clay ponds may be nearly white. They are found in lakes and ponds, have external gills, and are relatively large (0.75-4" snout to vent) and heavy-bodied.

Similar species: Idaho Giant Salamanders in western Montana. None in eastern Montana.

Habitat and Habits: Tiger Salamanders in eastern Montana are primarily associated with prairie or agricultural habitats. They are also found in wooded draws and ponderosa pine forests (Reichel 1995b, Hendricks and Reichel 1996). They breed in ponds or lakes, usually those without fish present. In arid areas, they may also be found in springs, intermittent streams, and stock ponds. Adults spend much of the day in rodent burrows, becoming active on the surface at night. Adults may be active relatively late in the year.

Surveying: Larvae and eggs may be seen in ponds during the day and may be sampled with a dipnet. Migrations of hundreds or thousands of newly transformed adults are occasionally seen in mid-late summer or early fall. During the breeding season, adults are often seen moving to or away from the water or breeding in it. Pitfall and minnow traps may be used to capture adults at this time. Throughout the rest of the summer adults are difficult to find; using pitfall traps or driving roads on warm rainy nights may be the best techniques then.

Status: The only salamander in eastern Montana. The species is widespread and probably more abundant than survey records indicate.

Montana Natural Heritage Program rank: G5 S5.

**Tailed Frog** (*Ascaphus truei*) **AAAAA01010**

Description: Adults are gray or brown with gray, brown, or occasionally yellow blotches; the skin has a distinctly bumpy texture. The adult has a snout-vent length of 1.5-2" and lacks a tympanum. The outer toe of the hind foot is broader than the other toes. The male has a bulbous "tail" which acts as a penis.

*Eggs and Larvae*: Approximately 50 eggs are laid in bead-like strings attached to the underside of rocks. The tadpole (up to 2" long) is unique in that it has a large mouth modified into a sucker; the color is quite variable.

Similar species: No other frog or toad has the outer toe of the hind foot broader than the other toes; all other frogs and toads have a tympanum behind each eye.

Habitat and Habits: Tailed Frogs are found in and along small, swift, cold mountain streams. In the Cascade Mountains of Washington and Oregon, the Tailed Frog appears to be very sensitive to siltation and frequently disappears in and downstream from clearcuts and water diversions (Bury, pers. comm.). Preliminary findings do not indicate that this is the case in Montana. Eggs are laid during the late summer and take approximately four weeks to hatch. Tadpoles take 1-4 years to metamorphose, depending on water temperature (Nussbaum *et al.* 1983; Metter 1967). Sexual maturity in Montana is attained at ages 6-7, (Daugherty and Sheldon 1982) which is the latest age for sexual maturity of any North American amphibian.

Surveying: Tadpoles are frequently found while electro-shocking fish. They may also be found by turning over rocks in rapid water, with a net held just downstream. Adults are best found by walking up streams starting 30-60 minutes after dark.

Status: Tailed Frogs should be considered a species with a very localized distribution in Montana. However, the species may be more common and widespread in suitable habitat than is currently known. It should be looked for throughout its potential range. It is common and widespread in northwestern Montana (Reichel and Flath 1995, Werner and Reichel 1994, 1996). Previously it was a USFWS Candidate species (C-2). We would recommend that all sightings of this species be reported.

Montana Natural Heritage Program rank: G5 S3S4.

**Western Toad** (*Bufo boreas*) **AAAAA01140**

Description: Adults are colored with a gray, brown, or olive-green mottling and a prominent white or yellowish line down the center of the back; very young transformed toads typically lack the dorsal line, and the warts are often red-brown in color. The pupils are horizontal. The adult has a body length of 2.5-5". There are no cranial crests and the skin is relatively dry with many warts and glands present.

*Eggs and Larvae*: Eggs are laid in long, clear, double strings, and each has a black embryo. Tadpoles are typically jet black, while all mid- to large-sized frog tadpoles in Montana are green or bronze (except for some Tailed Frogs); very small frog tadpoles are also black.

Similar species: Other Montana toads have cranial crests between their eyes. The Plains Spadefoot has one tubercle on the sole of the hind feet, a vertical pupil, and smoother skin. NOTE: It is very difficult to distinguish among the four Montana toad species eggs, larvae, and recently-transformed toadlets.

Habitat and Habits: Adults are largely terrestrial and found in a variety of habitats from valley bottoms to high elevations; they breed in lakes, ponds, and slow streams with a preference for shallow areas with mud bottoms. Breeding and egg laying in Montana usually takes place 1-3 months after snow-melt, from April at lower elevations to July at higher sites. Tadpoles are typically 2-3 months old at metamorphosis in Montana, depending on water temperature (Black 1970). Following metamorphosis, hundreds of small toads, many with the tails still present, can be found on the shores of breeding ponds.

Surveying: Tadpoles are easily seen in ponds during the day and can be sampled with a dipnet. During the breeding season, adults may be seen in the water but at other times are found in more terrestrial habitats.

Status: The rarity of this species and lack of recent sightings in the eastern ranges is of concern. Brunson (1952) regarded the Western Toad as one of the most common batrachians (frogs and toads) in western Montana. Black (1970) supported its common occurrence not only in the west, but also in many counties east of the continental divide. The Western Toad has declined from the most common anuran in western Montana, to a relatively rare one in the state in the past 25 years (Reichel and Flath 1995, Werner and Plumber 1995, Werner and Reichel 1994, 1996).

The U.S. Fish and Wildlife Service now lists this species as a Candidate (C-1) species in Colorado, Wyoming, and New Mexico. Apparent declines have recently been reported in northern Idaho (C. Peterson pers. comm.), Yellowstone National Park (Koch and Peterson 1995, Peterson *et al.* 1992), Wyoming, and Colorado (Carey 1993). We would recommend that all sightings of this species be reported and that a monitoring program be set up for this species.

Montana Natural Heritage Program rank: G4 S3S4.

**Great Plains Toad** (*Bufo cognatus*) **AAABB01050**

Description: Adults have dry skin with small warts. The coloration is dominated by a number of large, dark, somewhat symmetrical spots surrounded by light edges on the back. The dorsal background color is gray, light brown or olive green. The Great Plains Toad has converging v-shaped cranial crests between the eyes and post-orbital crests connecting to them at a right angle behind the eyes; the post-orbital crests typically touch the parotoid glands. The pupils are horizontal. The adult has two black tubercles on the hind feet and a body length of 2 - 3.5". *Eggs and Tadpoles*: Similar to Woodhouse's Toad.

Similar species: Other Montana toads lack the somewhat symmetrical spotted pattern on the back. NOTE: It is very difficult to distinguish among the four Montana toad species in recently transformed toadlets.

Habitat and Habits: Adults may favor higher elevation grasslands than Woodhouse's Toad, which favors floodplains (Bragg 1940, Timkin and Dunlap 1965, Black 1970). They have also been found in agricultural areas, open Ponderosa pine forests and savannahs in southeastern Montana (Black 1970). They are most active on nights following heavy rains (Hammerson 1982a). They normally breed in temporary ponds resulting from heavy rains or irrigation runoff or reservoirs with much fluctuation (Bragg 1940, Hammerson 1982a). In Montana, breeding apparently occurs from May to July (Black 1970). Females lay strings of eggs that hatch after 2-3 days (Hammerson 1982a). Young typically metamorphose after about 1.5 months, though this has been reported to occur in as few as 17 days (Hahn 1968, Hammerson 1982a). They spend much of the year underground and emerge in response to warm rains.

Surveying: Adults may be located by using their loud, identifying calls on warm (>60$^{?}$F) nights following heavy rains (Hammerson 1982a). "Road hunting" on warm nights may also be effective. Eggs and tadpoles are seen in ponds during the day and can be sampled with a dipnet; however, identification of toad eggs and tadpoles is difficult to impossible in the field.

Status: Occurs in localized areas in eastern Montana, with large gaps in its known range. Geographical and habitat relationships of the Great Plains Toad with other toads in Montana are not well known, nor are status and distribution clear. It should be watched for at low elevations in prairie or shrub-steppe habitat. Any located should be well-documented with a description written at the time indicating how this species was differentiated from other toads present in Montana.

Montana Natural Heritage Program rank: G5 S3S4.

**Canadian Toad** (*Bufo hemiophrys*) **AAABB01080**

Description: Adults have dry skin with small warts, and are gray, brown, or olive-green with mottling or spots. A somewhat indistinct white or yellowish line runs down the center of the back. It has parallel cranial crests that are fused into a lump between the eyes; the lump may or may not have a groove in the center. Post-orbital crests behind the eyes are absent or poorly developed. The adult has two black tubercles on the hind feet and a body length of 1.5-3".
*Eggs and Tadpoles*: Similar to the Western Toad.

Similar species: The Western Toad lacks cranial crests. The Great Plains Toad has large, white-bordered, dark dorsal blotches. Woodhouse's Toad lacks the lump between the eyes, has well-developed post-orbital crests, and frequently has its parotoid gland touching the post-orbital crests. NOTE: It is very difficult to distinguish among the four Montana toad species in recently-transformed toadlets.

Habitat and Habits: A toad of the prairie, usually found near water. It burrows extensively and probably requires deep, soft soil. Little is known of this species in Montana.

Status: Extremely rare in Montana; known from a single site in Daniels County. Nearly extinct in Wyoming. Geographic and habitat relationships with other toads in Montana are poorly known.

**Woodhouse's Toad** (*Bufo woodhousii*) **AAABB01180**

Description: Adults have dry skin with small warts, and are gray, brown, or olive-green with paler mottling or spots. A prominent white or yellowish line runs down the center of the back; very young transformed toads typically lack the dorsal line, and the warts are often red-brown in color. Woodhouse's Toad has parallel cranial crests between the eyes and post-orbital crests connecting to them at a right angle behind the eyes; the post-orbital crests typically touch the parotoid glands. If a lump-like boss is present on the snout, it does not extend back between the eyes. The pupils are horizontal. The adult has two black tubercles on the hind feet and a body length of 2.5-4".

*Eggs and Tadpoles:* Similar to those of the Western Toad.

Similar species: The Western Toad lacks cranial crests. The Great Plains Toad has large, white-bordered, dark, dorsal blotches. The Canadian Toad has a lump between the eyes; frequently the parotoid gland is separated from the post-orbital crest which may be broken or absent. NOTE: It is very difficult to distinguish among the four Montana toad species eggs, larvae, and recently-transformed toadlets.

Habitat and Habits: Adults are partially terrestrial but often found near water. They are usually found in irrigated agricultural areas and flood plains, rather than the more upland areas used by Great Plains Toads (Bragg 1940, Timkin and Dunlap 1965, Black 1970). They are most active at night, although they may at times be found feeding during the day (Hammerson 1982a). They typically breed in permanent lakes, ponds, reservoirs, and slow streams, with a preference for shallow areas with mud bottoms (Black 1970, Hammerson 1982a, Baxter and Stone 1985). Breeding and egg laying is spread out over the spring and early summer, with known dates from Montana ranging from 4 May to 1 July (Black 1970).

Surveying: Adults may easily be found by using their loud calls for identification on warm (>54° F) nights; calling peaks during the first few hours after sunset (Hammerson 1982a). "Road hunting" on warm nights may also be effective. Eggs and tadpoles are seen in ponds during the day and can be sampled with a dipnet; however, identification of toad eggs and tadpoles ranges from difficult to impossible in the field.

Status: Woodhouse's Toad is relatively common in southeastern Montana, however, its status elsewhere in the state is unclear. Geographic and habitat relationships with other toads in Montana are not well known. It should be watched for at low elevations in prairie or shrub-steppe habitat; it could occur along the Missouri River. Any located should be well documented with a description indicating how the species was differentiated.

Montana Natural Heritage Program rank: G5 S4.

**Western Chorus Frog** (*Pseudacris triseriata*) **AAABC05070**

Description: Adults are very small (0.75-1.5") and have tiny, almost unnoticeable toe pads. They have a dark line extending from the snout through the eye to the groin. Basic coloration is quite variable with the background color being green, brown, gray, or reddish. Typically 3-5 dark longitudinal stripes are present on the head and back which may be broken up into spots on some individuals.

*Eggs and Tadpoles:* Eggs are laid in small clusters of 10-100, usually less than 1" across and attached to submerged vegetation (Wheeler and Wheeler 1966, Baxter and Stone 1985). Individual eggs are about 1 mm in diameter. Tadpoles are brown/bronze and the eyes are located on the sides of the head.

Similar species: Pacific Chorus Frogs (*Pseudacris regilla*) have obvious toe pads and an eye stripe ending at the shoulder. Recently metamorphosed Ranid frogs could be confused with this species but the coloration differs and the tiny toe pads are lacking (often visible only with a magnifying glass on small chorus frogs).

Habitat and Habits: Western Chorus Frogs are regularly found in the water only during the breeding period in spring. Their presence is obvious during this time due to their call which is given frequently at night and sporadically throughout the day. Following breeding, these frogs move into adjacent uplands and are rarely seen. In eastern Montana they breed in temporary ponds and small lakes surrounded by prairie; in some locations in Montana they are also found in open forested habitats. Eggs hatch in about 2 weeks and tadpoles are about 2 months old at metamorphosis (Wheeler and Wheeler 1966, Nussbaum *et al.* 1983).

Surveying: Adults are easily surveyed for, using their calls for identification during the breeding season in the spring and early summer. During the breeding season, adults may also be seen in the water, but their small size and habit of freezing or diving when disturbed makes observation difficult; night surveys may be more productive. Egg masses are difficult to find. Tadpoles may be seen in ponds during the day and can be sampled with a dipnet.

Status: Common throughout the prairies of eastern Montana.

Montana Natural Heritage Program rank: G5 S5.

**Plains Spadefoot** (*Scaphiopus [=Spea] bombifrons*) **AAABF02010**

Description: Adults are colored gray or brown with darker mottling on the back and a white belly. Some individuals have indistinct longitudinal streaking. The pupils of the Plains Spadefoot are vertically elliptical and there is a high, hard lump between the eyes. Its skin is less warty than true toads. The adult has a single tubercle on the hind feet and has a body length of less than 2.5".

*Eggs and Tadpoles*: Oval egg masses of 10-250 eggs are attached to underwater plants or debris. Tadpoles are mottled sooty and olive-yellow above and paler below with gold metallic flecking over all; iris is gold.

Similar species: Other Montana frogs and toads have round or horizontally elliptical pupils.

Habitat and Habits: Adults are found in grassland and sagebrush areas, particularly in areas with sandy or loose soil (Wheeler and Wheeler 1966, Hammerson 1982a, Baxter and Stone 1985). Except during breeding, they are seldom found in the water. They are primarily nocturnal and emerge from their burrows only following heavy rains. They breed in shallow temporary pools usually following heavy spring or summer rains (Hammerson 1982a). Males call loudly, with groups being heard for up to a mile. Eggs hatch after 2-3 days and tadpoles transform in 6-10 weeks (Wheeler and Wheeler 1966, Hammerson 1982a).

Surveying: Adults may be easily found by using their calls for identification when breeding at night or by "road hunting" on warm, rainy nights. Calling normally takes place only when the temperature is >50° F (Hammerson 1982). Tadpoles are seen in ponds during the day and can be sampled with a dipnet. Surveying is complicated by the long time periods which this species spends underground, especially during droughts.

Status: Locally common in eastern Montana; there are large gaps in the known range. It should be watched for at low elevations in prairie or shrub-steppe habitat. Any located should be well-documented.

Montana Natural Heritage Program rank: G5 S4?

**Northern Leopard Frog** (*Rana pipiens*) **AAABH01170**

Description: Adults are brown or green with large, dark spots surrounded by light-colored halos on the sides and back. The dorso-lateral folds (ridges along the sides of the back) are usually lighter in color that the surrounding background. The under-side is typically white, but may be cream-colored or yellowish. The adult has a body length of 2-5". Newly transformed froglets may lack spots and are about 1" in length (Leonard *et al.* 1993).

*Eggs and Tadpoles:* Eggs are laid in 2-5" globular masses composed of hundreds to thousands of eggs (Hammerson 1982a, Nussbaum *et al.* 1983). The tadpoles are brown to dark brown on top with some metallic flecking, whereas the underside is often nearly transparent (Nussbaum *et al.* 1983). Total length of tadpoles may reach more than 3"; the eyes are located on top of the head.

Similar species: None, although some newly-transformed froglets may lack spots, which makes them extremely difficult to distinguish from Spotted and Wood Frogs.

Habitat and Habits: Northern Leopard Frogs are found in or near water in non-forested habitats. Vegetation is typically dense, as in a cattail marsh or dense sedge-meadow. Breeding takes place in lakes, ponds (temporary and permanent), springs, and occasionally backwaters or beaver ponds in streams. In Colorado, eggs hatch in 4-15 days and tadpoles take 8-15 weeks to metamorphose, depending on water temperature (Hammerson 1982a).

Surveying: Both adults, tadpoles, and eggs are easily seen in and along the water during the day and can be sampled with a dipnet; adults may also be captured by hand. At very low densities adults may be difficult to find and may be detected using a call recorder. Tadpoles are difficult to tell from those of the Spotted Frog in areas where the two species may overlap.

Status: Historically, the Northern Leopard Frog was widespread in Montana but it now appears to be extinct throughout much of the western part of the state. It is still common and widespread in the southeastern corner of the state, but it may be declining in central and northeastern Montana. It appears that only localized populations are present on the western edge of the plains. Given the recent declines in this species and the unusual habitat, this record should be treated as hypothetical until verified. Due to its significant decline and lack of current reports from the HNF, all sightings of this species should be documented.

Northern Leopard Frogs are now absent from many other areas in North America where they were common a few decades ago. Widespread extinctions are known from Alberta (Koonz 1993), Wyoming (Koch and Peterson 1995), Colorado (Hammerson 1982b, Corn and Fogelman 1984), Idaho (Groves and Peterson 1992), Washington, and Oregon (Leonard *et al.* 1993). Bullfrog and fish introductions, acid rain, ozone depletion, immune system suppression, and "Postmetamorphic Death Syndrome" have all been suggested as causes for frog extirpations in other areas (Corn and Fogelman 1984, Hammerson 1982b, Carey 1993, Leonard *et al.* 1993).

Montana Natural Heritage Program rank: G4 S3S4.

**Bullfrog** (*Rana catesbeiana*) **AAABH01070**

Description: The largest of North American frogs, adult Bullfrogs may reach 8 inches in body length. The skin is smooth. Adults are usually pale to dark green or brownish green with darker spots or blotches. There are a series of black bands across the legs. The underside is cream to yellowish with gray mottling. No dorso-lateral folds are present, however there is a prominent ridge running from the eye over the tympanum to the shoulder. Males have extensive yellow pigment on the underside, especially in the throat region, and swollen thumbs. The diameter of the tympanum is larger than the diameter of the eye in males but about the same size in females.

*Eggs and Tadpoles:* Egg masses are a 1-2 egg thick film of thousands of eggs and may reach several feet across. Tadpoles may reach 4.5" in total length and are olive green with numerous black spots dorsally; the belly is white to creamy with varying amounts of dark mottling.

Similar species: Other Montana Ranid frogs have dorso-lateral folds.

Habitat and Habits: Bullfrogs are rarely seen far from the water's edge and are usually in the water. They are associated with larger bodies of quiet water such as ponds, lakes or backwaters of streams, usually with extensive emergent vegetation such as cattails or reeds. They emerge in the spring only after air and water temperatures have warmed considerably and insect populations are beginning to proliferate. Breeding takes place in June when males attract females to their territory by a series of very deep, loud "brr-umps." The large egg mass tends to float on the surface when first laid, but sink into the water prior to hatching (Hammerson 1982a, Nussbaum *et al*. 1983). Tadpoles over-winter in the Pacific Northwest, transforming during their second summer (Nussbaum *et al*. 1983, Leonard *et al*. 1993). The bullfrog is a voracious feeder, eating anything smaller than itself, including ducklings, fish, mice, frogs, and small turtles. Bullfrogs have been implicated in extirpations of native frogs and turtles, and declines in waterfowl production (Hammerson 1982b, Leonard *et al*. 1993, Kiesecker and Blaustein 1998).

Surveying: Tadpoles and adults can easily be detected visually or sampled by using a dipnet; both may be found from spring through fall. Capture success of adults is enhanced by night sampling using a headlamp, as they are very wary and do not allow close approach during the day. Eggs are also easy to detect when laid in the early summer.

Status: Bullfrogs are native to the eastern and central U.S. and have been introduced to the western states. It is possible that several unauthorized releases have occurred on private lands, based on conversations with ranchers. They were introduced into western Montana prior to the mid-1960's (Black and Bragg 1968), but the date when they were first brought to eastern Montana is unknown. Bullfrogs should be watched for in ponds, lakes, sloughs, or slow streams. Any located should be well documented.

Montana Natural Heritage Program rank: G5 SE4.

**Columbia Spotted Frog** (*Rana luteventris [= pretiosa]*) **AAABH01290**

Description: The adult has a snout-vent length of 2-4". Adults are dark to light brown, gray, or olive green with dark spots (frequently with lighter centers) found on the back, sides and legs. The number and pattern of spotting is quite variable. The back and sides are often covered with small bumps. The underside of the legs is bright red, salmon, or orange; this bright color may extend up to the chin or be replaced by a light, mottled gray on the chin, chest, and/or belly. In younger subadults, bright leg color is often lacking and instead a light, lemon-colored wash is present. In these subadults, there is often a dark mask present, with a light jaw stripe extending to the shoulder; both the mask and jaw stripe may be less obvious in larger, older animals.

*Eggs and Tadpoles:* Eggs are laid in large, globular masses of 150-500 at the surface of the water. The tadpoles are dark green to brown on top with some gold flecking whereas the underside has an iridescent bronze or silver color. Total length of tadpoles may reach 3"; the eyes are located on top of the head.

Similar species: The bright-colored pigment on the undersides of the adult's legs distinguish this species from all other frogs in Montana. Younger individuals, without colored legs, may usually be distinguished from other frogs by a combination of: 1) dorsal spots usually present but not surrounded by light-colored halos; 2) dorso-lateral folds present; 3) toes without pads at the tips; and 4) a pale gray, (rather than white) belly.

Habitat and Habits: Spotted Frogs are regularly found at the water's edge in openings within forest habitats. Wetlands in or near treeline are also used, but populations are uncommon in the large, open intermountain valleys. Eggs hatch in 2-3 weeks and tadpoles take 2-14 months to metamorphose, depending on water temperature (Nussbaum *et al.* 1983, Turner 1958). Breeding takes place in lakes, ponds (temporary and permanent), springs, and occasionally backwaters or beaver ponds in streams. All the egg masses in a particular pond are often found in the same location at the margin of the pond; therefore, the eggs are susceptible to drying up if pond levels recede substantially before hatching. Young and adult frogs often disperse into marsh and forest habitats but are not usually found far from open water.

Surveying: Adults, tadpoles, and eggs are easily seen in and along the water during the day and can be sampled with a dipnet; adults may also be captured by hand. Many adults may leave the breeding ponds following egg laying and move to nearby feeding areas for the summer. Tadpoles are difficult to distinguish from those of the Northern Leopard Frog in areas where the two species may overlap.

Status: The most common frog in western Montana. The species was previously a U.S. Fish and Wildlife Service Category 2 Candidate species in Montana; elsewhere in its range it is listed as a C-1, with Threatened/Endangered status warranted, but precluded by work on higher-priority species (U.S. Fish and Wildlife Service 1993). While significant declines are known from the southern end of the range (Nevada, southern Idaho, Utah) and are also apparent in coastal Washington (McAllister *et al.* 1993), Oregon, and California, recent (as yet unpublished) research indicates that those populations are different species.

Montana Natural Heritage Program rank: G4 S4.

**Short-horned Lizard** (*Phrynosoma douglasi*) **ARACF12030**

Description: The Short-horned lizard has a broad, somewhat flattened body and relatively short limbs and tail. It is generally tan to gray with dark and light spots and blotches; the belly is white. There is a distinctive line of pointed scales along each side, and the head has short, blunt "horns" pointing backward. Adult lizards range from 1.7 - 5.5" in length.

*Young*: Young are live-born and resemble small adults.

Similar species: None.

Habitat and Habits: The Short-horned lizard is found in a variety of habitats, including dry open forests, grasslands, and sagebrush; the soil is usually loose or sandy. In firmer soil situations, it may use the burrows of other animals. It is active during the day, typically with the peak of activity in mid-late morning. A Short-horned Lizard may squirt blood from its eyes when disturbed. Little is known about reproduction in this part of the range; young are born in late summer. Ants are the primary food of the species.

Surveying: They may be surveyed for by slowly walking through appropriate habitat and watching carefully for them; look carefully near ant mounds; this technique has low success with Short-horned Lizards however. As with many lizards and snakes, they are easily missed. Carefully documented incidental observations may provide the best clues to their distribution. They may be also taken in pitfall or funnel traps in combination with drift fences.

Status: The Short-horned Lizard subspecies found in Montana (*P. d. brevirostra*) is currently a U.S. Fish and Wildlife Service Category 2 Candidate species (U.S. Fish and Wildlife Service 1994). It is widely distributed (but apparently localized) in eastern Montana. This species may be vulnerable to collecting for the pet trade and agricultural conversion of native habitats. It should be watched for in open pine, prairie, or shrub-steppe habitat with loose or sandy soils; all sightings should be documented.

Montana Natural Heritage Program Rank: G5 S4. A Species of Special Concern.

**Sagebrush Lizard** (*Sceloporus graciosus*) **ARACF14030**

Description: The Sagebrush Lizard is small (1.5 - 2.5" body length) and narrow-bodied. The color pattern in adults consists of alternating dark and light stripes running down the back. The colors are typically brown, gray, and cream. Males have mottled blue throat patches and bright blue belly patches, while females are white or yellow below (Censky 1986). The body and tail scales appear somewhat spiny.

*Eggs and young*: There are 2 - 7 tough, leathery, white eggs in a clutch, averaging about 7.5 x 12 mm (Nussbaum *et al*. 1983). Body length of hatchlings is about 25 mm, and coloration is similar to adults.

Similar species: None in Montana. The Short-horned Lizard has a wide body.

Habitat and Habits: Sagebrush Lizards are found primarily in sagebrush areas, but also occur in open forests and brush lands; they are found in both areas of fine soils and rocky outcrops (Hammerson 1982a, Baxter and Stone 1985, Nussbaum *et al*. 1983). In the Yellowstone area, they are found near thermal features (Mueller 1969). They are active during the day, with mid-morning and late-afternoon peaks of activity (Hammerson 1982a). Females lay eggs in loose or sandy soil in early summer and the young hatch in late summer. They feed primarily on insects and other arthropods.

Surveying: They may be surveyed for by slowly walking through appropriate habitat on warm, sunny days and carefully watching for them; this technique is very effective for the Sagebrush Lizard. However, as with many lizards and snakes, they may be overlooked if conditions are not correct. Carefully documented incidental observations provide excellent clues to their distribution. They may be captured with a pole and noose or may be also taken in funnel traps with drift fences. Adults and juveniles have been captured inadvertently in pitfall can traps set for shrews (P. Hendricks, pers. observ.). Mark-recapture methods offer the best opportunity for determining population status.

Status: The Sagebrush Lizard was a former U.S. Fish and Wildlife Service Category 2 Candidate species (USFWS 1994). It is apparently locally common in southern Montana, from Yellowstone Park eastward to at least Chalk Butte in Carter County. They are known from the western border of South Dakota south of Harding County (C. R. Peterson pers. comm., Stukel and Backlund 1997), and two disjunct populations are known from the western edge of North Dakota (Censky 1986). This species should be watched for, and any animals located should be documented.

Montana Natural Heritage Program rank: G5 S4.

**Painted Turtle** (*Chrysemys picta*) **ARAAD01010**

Description: Adult Painted Turtles have a relatively flat dorsal shell, or carapace, the length of which may reach 9" in females and 7" in males. The background color of the shell may be dark brown, olive, or black. A series of short, irregular yellow lines are often scattered across the shell, and a red and black border forms the outer edge. The ventral shell, or plastron, is red with a centrally-located yellow and black blotch with edges flaring out along the border of the scutes. The edge of the plastron also has a series of black and yellow blotches. The head, neck, and legs are marked with yellow lines and a red spot appears behind the eye. Very dark colored individuals are occasionally found. Males are distinguished by longer front claws and longer tails with the anus posterior to the margin of the carapace (Ernst *et al.* 1994).

*Eggs and Young*: The elliptical, white, soft-shelled eggs are about 28-35 mm in length and 16-23 mm in width (Ernst *et al.* 1994). They typically number 6-23 per clutch. Coloration of young Painted Turtles is more vibrant and the shell is not quite as flattened as adults.

Similar Species: None.

Habitat and Habits: Painted Turtles are active during the day and are rarely seen far from ponds, lakes, or the slow-moving water of streams. Adults are primarily herbivorous, feeding on a variety of aquatic plants, but will also scavenge on animal remains. Eggs are usually laid within 10-20 feet of the water's edge, although some individuals will travel up to 600 m seeking a suitable site. During egg-laying, the female excavates a hole with her hind feet and deposits the eggs, which are then covered by several inches of dirt. Predation on turtle eggs by raccoons, skunks, etc. is common, and shell fragments are evidence of such activity. Female Painted Turtles may lay more than one clutch of eggs each summer. Young borne of late egg depositions overwinter in the nest and do not emerge until the following spring (Ernst *et al.* 1994). Once females lay their eggs, they return to the pond, where they can often be seen basking on logs or rocks along with juveniles and males. Painted Turtles are sexually mature at 3-5 years of age and may live to be 30 years or older (Ernst *et al.* 1994).

Surveying: Although various turtle traps can be used for surveys, visual identification is suitable for presence/absence studies since the three turtle species in Montana are easily distinguished. Basking peaks at different times during the day, depending on season and location; in the northern states and Canada it generally peaks in the morning. Surveys should be done on sunny days with a pair of binoculars. During cold or cloudy weather, turtles tend to remain underwater for long periods and can be missed on a walk-through survey.

Status: Painted Turtles are locally quite common in Montana at lower elevations. They are known from lower elevation areas on the plains; any sightings should be documented. There has been some concern about Painted Turtle populations nationally; whether declines have occurred in Montana is unknown

Montana Natural Heritage Program Rank: G5 S5.

**Spiny Softshell** (*Trionyx spiniferus*) (=*Apalone spinifera*) **ARAAG01030**

Description: Spiny Soft-shells have flexible, leathery shells. The carapace is olive-gray, marked with dark spots. The plastron is white or light cream-colored. Female carapace length is up to 18 inches or more, whereas males are typically 6-8 inches. The nostrils are terminal, allowing this turtle to remain entirely beneath the surface and take air through its "snorkel".

*Eggs and Young*: The nest is a flask-shaped excavation containing 4-39 (typically 12-18) hard-shelled, spherical, white eggs. The individual eggs range in size from 24-32 mm in diameter and average about 28 mm. Hatchlings resemble adults and are 30-40 mm in shell length (Ernst *et al.* 1994).

Similar Species: None.

Habits and Habitat: Spiny Softshells are active during the day. This highly aquatic turtle is found in rivers or their connecting backwaters with muddy or sandy bottoms. Unlike other Montana turtles, they do not move overland from one water body to another. Mud and sand banks and bars are used for both basking and nesting. Hibernation takes place beneath the water, usually beneath 5-10 cm of bottom substrate (Ernst *et al.* 1994). The retracted head and neck combines with the profile of the shell to produce a wedge shape, which allows this turtle to escape by literally diving into the bottom mud. If necessary, additional strokes of the legs will completely bury it in the substrate, hidden from view. Food items include fish, crayfish, frogs, toads, aquatic insects, and carrion. Spiny Soft-shells have a surprisingly long, agile neck and can inflict a painful bite. They can be safely handled by grasping the shell on each side between the front and rear legs with the head pointing *away* from the captor.

Surveying: Although various turtle traps can be used for surveys, visual identification is suitable since the three turtle species in Montana are easily distinguished . A pair of binoculars is helpful and surveys should be done on warm sunny days; basking seldom takes place before 10:00 a.m. (Ernst *et al.* 1994). During cold or cloudy weather, turtles tend to remain underwater for long periods and can be missed on a walk-through survey. Care should be taken to watch for the snorkel-like nostrils projecting just above the surface of the water.

Status and Distribution: Found mainly in the Yellowstone and Missouri Rivers and their major tributaries. These populations may be separated from each other and are believed to be disjunct form the population in South Dakota (Ernst *et al.* 1994); they have not been reported from North Dakota (Wheeler and Wheeler 1966). The Missouri River population is known from the tail of Fort Peck Reservoir upstream to the first dam above, and from most of the Mussellshell River; their presence on other tributaries is presently unknown. Considered a Species of Special Concern in Montana.

Montana Natural Heritage Program Rank: G5 S3. Species of Special Concern.

**Common Snapping Turtle** (*Chelydra serpentina*) **ARAAB01010**

Description: The Common Snapping Turtle appears too large for its shell. The upper shell is olive-gray, or brown to black with the posterior edge very serrated; it has three low keels with protrusions positioned on each scute (a scale-like plate on the shell). The much-reduced lower shell is cream-colored. A long, keeled tail and warty tubercles on the head and neck are distinguishing characteristics. Males average about 10-20% larger than females, and have the anal opening posterior to the rim of the upper shell (Ernst *et al*. 1994). Most adults range from 13-30 pounds in Montana; the largest known Montana specimen was a 47-pound male (Reichel and Flath 1995).

*Eggs and Young*: The spherical, white, tough-shelled eggs are about 23-33 mm in diameter (Ernst *et al.* 1994). They typically number 20-40 per clutch (Ernst *et al.* 1994). Coloration of young turtles is similar to adults and the upper shell is 24-31 mm long.

Similar Species: None.

Habits and Habitat: Snapping turtles occur in stock ponds, reservoirs, sloughs and backwaters, rivers, irrigation ditches, and slower-moving streams, such as Otter Creek in Powder River County (Hendricks and Reichel 1996). They prefer waters with a soft mud or sand bottom, and much aquatic vegetation or debris (Ernst *et al*. 1994). They do occasionally move overland, but are found doing so less frequently then Painted Turtles. Food is mostly animal matter. In the north it is most active in the morning and evening (Ernst *et al*. 1994). Adult females first breed at 12-19 years of age in Michigan and Ontario (Ernst *et al*. 1994). Eggs are laid in nests excavated in sandy or gravelly areas or muskrat houses in late spring or early summer. Sex is determined by the temperature of incubation (Ernst *et al*. 1994). Hibernation is in soft bottoms, under cut-banks, or among submerged roots. Snapping Turtles have a reputation for an evil temper, and are quick to bite. They may be handled safely if carried by the tail with the upper shell *away* from the captor.

Surveying: Although various turtle traps can be used for surveys, visual identification is suitable for presence/absence studies since the three turtle species in Montana are easily distinguished. Surveys should be done on sunny days with a pair of binoculars. During cold or cloudy weather, turtles tend to remain underwater for long periods and can be missed on a walk-through survey.

Status and Distribution: Common Snapping Turtles occur in the Yellowstone River downstream from Billings, the Missouri River downstream from Ft. Benton, and probably all tributaries (such as the Tongue River) with suitable water. There are no records downstream from Ft. Peck Dam. They also occur in water bodies that can be reached by a short trek across land. Eastern Montana records are few, widely scattered, but mostly concentrated in the coal country of Rosebud and Powder River counties. Concentrated unregulated harvest could be detrimental to local populations. It is probably more abundant and widespread in eastern Montana than records indicate. All sitings should be documented.

Montana Natural Heritage Program rank: G5 S3. Species of Special Concern, BLM Special Status Species.

**Rubber Boa** (*Charina bottae*) **ARADA01010**

Description: The Rubber Boa looks and feels like rubber, hence its name. It is a small snake (14-33" length), stout, and uniformly-colored either brown or green on the dorsal side. The ventral surface is cream to tan in color. The scales are small and smooth, except for those on the head which are enlarged. The tail is short and blunt and the eyes are very small. It is a very slow moving snake which can easily be caught if detected.

*Young:* Rubber Boas are born alive and young are more tan (or even pinkish) than the adults on both the dorsal and ventral surfaces.

Similar species: The Racer is much quicker and more active, has larger eyes, and a thin, tapered (not blunt) tail.

Habitat and Habits: The Rubber Boa is a secretive, slow-moving, docile snake, usually found under logs and rocks in either moist or dry forest habitats, but rarely in marsh or bog situations. Denning locations are typically in areas with fractured rock on south facing slopes; recent data indicates it rarely moves more than a short distances from its den (C. Peterson pers. comm). Occasionally this snake is seen sunning itself on a road, trail, or open area, but it is primarily nocturnal. Feeding is primarily on small mice, but also on shrews, salamanders, snakes and lizards. Two to eight young are born alive in late summer or early fall.

Surveying: There are no practical methods for surveying other than systematic searches of a given area rolling over rocks, logs, etc. Driving roads at night, particularly after a rain when the temperature is > 50° F, may be more effective, especially on roads which follow a stream. Previous sightings are of value in locating general areas of activity and denning sites. Funnel traps may be effective.

Status: Sightings of Rubber Boas are infrequent, but they are widely distributed and probably common throughout western Montana at low to mid-elevations. Of particular interest would be any documentation of denning sites.

Montana Natural Heritage Program Rank: G5 S4.

**Racer** (*Coluber constrictor*) **ARADB07010**

Description: A slender, but moderately long snake, the Racer ranges from 20-65 inches in length. Adult coloration is uniform across the dorsal side but it can vary from a greenish-gray to brown or blue. The ventral side is whitish to pale yellow, the latter color extending onto the upper lip scales and nasal region. The eyes are relatively large. The scales are smooth and the nostril is bordered by two scales.

*Young:* Snakes (up to about 20") have a much different coloration than the adults consisting of a series of dorsal brown blotches edged with black which run the length of the animal; a row of blotches is also found on each side of the animal extending onto the ventral side.

Similar species: Young Gopher Snakes may be distinguished by the keeled rather than smooth scales of the young Racer. Young Western Hognose Snakes have an upturned nose. Smooth Green Snakes are smaller and colored bright grass-green and whitish below; their nostrils are centered in single scales. Also see Rubber Boa.

Habitat and Habits: The Racer is associated with open habitats, in shortgrass, shrub-steppe, or forested areas (Hammerson 1982a, Baxter and Stone 1985). It is often found near water and rocks. The Racer is an extremely fast and agile snake. A clutch of perhaps 3-7 eggs is laid in the summer (Stebbins 1985). It preys on insects and small vertebrates such as mice and frogs.

Surveying: They may be surveyed for by slowly walking through appropriate habitat on warm, sunny days and carefully watching for them; this technique is moderately effective for the Racer. However, as with many lizards and snakes, they may easily be missed. Carefully documented incidental observations may provide the best clues to their distribution. They may be also taken in funnel traps with drift fences. Mark-recapture methods offer the best opportunity for determining population status.

Status: The Racer can be expected at low to mid-elevations across Montana. Any sightings should be documented. Of particular interest would be documentation of any den sites.

Montana Natural Heritage Program Rank: G5 S5.

**Milk Snake** (*Lampropeltis triangulum*) **ARADB19050**

Description: The Milk Snake is a slender and medium-sized snake (to 42 inches in length or more), with smooth scales. It has a Highly recognizable series of red to orange saddles or rings that are bordered by black bands and separated by white or yellow bands. Width of dark and light bands can vary markedly. The subspecies in Montana (*L. t. gentilis*) tends to be paler, with orange bands replacing red, and a light belly with few or no black spots.

Similar species: None in Montana.

Habitat and Habits: Little is known of Milk Snakes in Montana because only a few have been reported. In Wyoming and elsewhere they are usually found near cliffs, talus, outcrops, and rocky hillsides in forested and open country (Baxter and Stone 1985). They can be found in or under rotten logs. Milk Snakes are secretive and most active at night. They eat a variety of vertebrates, including other snakes, lizards, eggs, small mammals, and sometimes invertebrates such as earthworms and insects. Eggs are laid in mid-summer. Milk Snakes sometimes vibrate their tails when disturbed. Their name stems from an old tale alleging that these snakes milk cows.

Surveying: Timed site surveys can be conducted around cliff bases and outcrops. Nocturnal surveys may be the most productive. Most distribution information will likely come from recording incidental sightings. More intensive research may be done using funnel traps in combination with drift fences. The most intensive research and survey projects may use mark-recapture or radio-telemetry techniques.

Status: Milk Snakes are very rare and local in Montana. The majority of records are clustered at only a few sites in Montana, such as near Bridger in Carbon County, and Billings in Yellowstone County. The subspecies found in Montana is highly sought for the pet trade. All records of Milk Snakes should be fully documented. Of special interest would be documented denning sites.

Montana Natural Heritage Program rank: G5 S2. Species of Special Concern.

**Gopher Snake** (*Pituophis catenifer [=melanoleucus]*) **ARADB26010**

Description: Montana's largest snake, the adult Gopher Snake (also called Bullsnake or Pine Snake) can reach a total length of 7 feet, but most specimens seen in western Montana range between 3-5 feet. It is readily recognized by a series of large black to brown blotches which run down the back, and another series along the sides. The blotches, which are set on a yellow background, become more widely spaced and darker towards the tail. The dorsal scales are keeled. There is usually a black band on the head located in front of and extending below the eyes. The ventral coloration is yellow to white, often spotted with black, and the anal plate is undivided.

*Eggs and Young*: Gopher Snakes lay between 2-24 eggs during the summer months (Hammerson 1982a). The young resemble adults in coloration.

Similar species: Young Racers have a black border on dark blotches and the scales are not keeled. Young Western Hognose Snakes have an upturned nose. Western Rattlesnakes have a rattle on their tail and triangular shaped heads.

Habitat and Habits: Gopher Snakes are associated with dry, arid habitats including grassland, shrub-steppe, and open pine forest. They feed on rodents, rabbits and ground dwelling birds, and to a lesser extent on frogs, toads, etc., found around stock ponds and other wetlands. They have a habit of hissing and vibrating the tail when alarmed, often sounding like rattlesnakes. They occasionally climb trees, hence the common name "Pine Snake."

Surveying: Walk-through surveys, done on a regular basis in warm, sunny weather probably give the best results without resorting to trapping techniques. They are most easily found near dens in the spring and fall. Funnel trapping is effective and they may occasionally be found by night driving during the mid-summer. Data can be enhanced by mark-recapture techniques.

Status: Documentation of any denning sites would be of particular interest.

Montana Natural Heritage Program Rank: G5 S5.

**Western Rattlesnake** (*Crotalus viridis*) **ARADE02120**

Description: Rattlesnakes have a heat-sensing pit located between the nostril and the eye. The fangs are hollow and hinged, allowing them to be folded back against the roof of the mouth. The head is triangular in shape and blunt-nosed. The eyes are slightly elevated. There are several white lines which run along the side of the head. Adult Western Rattlesnakes have a narrow neck but a stout body with total length ranging from 15-60 inches. The dorsal background color varies from pale green to brown with a series of brown or black blotches edged with a dark and then light line extending the length of the body. The blotches often merge into rings on the tail. There are also blotches on the sides of the body. The ventral side is pale yellow to white and without blotches. The scales are keeled. The tail ends in a rattle which helps to warn potential predators of the snake's presence. The young have the same color pattern, but are brighter in color than adults.

Similar species: No other snake in Montana has rattles, but see Racer, Gopher Snake and Western Hognose Snake which may have similar color patterns.

Habitat and Habits: The Western Rattlesnake is an inhabitant of more open and arid country but it is also found in Ponderosa pine stands or mixed grass-coniferous forests. It is more likely to be encountered on south-facing slopes and areas of rock outcrops. It is feared and often needlessly killed due to its poisonous bite. Rattlesnakes may den in large numbers, moving up to 7 miles out from the dens during the summer (C. Peterson, pers. comm.); den sites are most common in south-facing talus slopes. In Wyoming, it is found up to elevations of over 8,500 feet (Baxter and Stone 1985). Rattlesnakes prey on a variety of animals including mice, ground squirrels, rabbits, amphibians, and other snakes. In Colorado, females give birth to 4-21 young during the summer (Hammerson 1982a).

Surveying: A walk-through survey on a warm sunny day is probably the best method for determining presence/absence; it is easiest to find near den sites in spring and fall. Funnel traps and night driving are both effective techniques. Mark-recapture methods can be used to determine more precise numbers.

Status: The Western Rattlesnake is most likely be encountered at lower elevations in open habitats. The habit of denning at traditional sites in large numbers makes rattlesnakes vulnerable to commercial collecting or simply killing by fearful people. Observations of Western Rattlesnakes should be reported to document the presence of this species; of particular interest would be documentation of any denning sites.

Montana Natural Heritage Program Rank: G5 S4.

**Common Garter Snake** (*Thamnophis sirtalis*) **ARADB36130**

Description: The Common Garter Snake consists of two color phases in western Montana, both ranging from 18-52" in length. Both phases have three yellow longitudinal stripes: one located dorsally and one on each side on the 2nd and 3rd scale rows above the belly scales. Between the yellow stripes is a black (or dark green) background, broken with red spots in one color phase but lacking red in the other. Ventral coloration varies from yellow to bluish, and some individuals of the red-sided color phase have small black spots on the edge of the ventral scales. The dorsal scales are keeled, and normally there are 7 upper labial scales.

*Young*: The coloration of young snakes is similar to that of the adults; young are live-born.

Similar species: The Western Terrestrial Garter Snake has black spots overlapping the dorsal yellow stripe; the background color between stripes tends to be paler dusky green, gray or brown. The Plains Garter Snake has the side yellow stripe on the 3rd and 4th scale rows above the belly scales and the dorsal stripe is often orange or red.

Habitat and Habits: Garter snakes are found in all forest habitats but are more common at lower elevations around marsh-bog-pond situations, where they prey on young fish, frogs, toads, mice and invertebrates. They are sometimes confused with water snakes because of their frequent aquatic exploits, but there are no true water snakes in Montana. Typical of most garter snakes, they emit a noxious secretion when handled and can be aggressive when disturbed. Historically they have been found at low elevations in the intermountain valleys as well as elevations up to 5,600 feet. Garter snakes eat a variety of vertebrates and invertebrates, with the Common Garter Snake concentrating more on amphibians than the Western Terrestrial Garter Snake. *Young:* The Common Garter Snake is a livebearer, giving birth to 12-18 young during the summer in Colorado (Hammerson 1982a).

Surveying: Timed-sight surveys may be conducted around wetlands and riparian feeding areas or at denning areas where higher concentrations of garter snakes occur; clear mornings are the best survey times. Much distributional information may come from recording incidental sightings. More intensive research and survey projects may use funnel traps in combination with drift fences, or mark-recapture or radiotelemetry techniques.

Status: Given the small number of records from throughout the area, all records should be documented until the distribution is better understood; of particular interest would be documentation of denning sites.

Montana Natural Heritage Program Rank: G5 S4.

**Western Terrestrial Garter Snake** (*Thamnophis elegans*) **ARADB36050**

Description: Adult Western Terrestrial (or Wandering) Garter Snakes are smaller than the Common Garter Snake, their length varying from 18-43". Three yellow longitudinal stripes are present (one dorsal, two lateral on the 2nd and 3rd scale rows), but the dorsal stripe is much narrower than that of the Common Garter Snake. A distinctive feature of the Western Terrestrial Garter Snake is a series of alternating black spots which run the length of the body between, and somewhat on, the yellow stripes. The background color between the stripes is a dusky gray, green or brown. compared to the black or occasionally dark green found in the Common Garter Snake. The ventral surface has a series of dark black/brown blotches that may cover most of the surface. All black, presumably melanistic, individuals are occasionally found near Townsend, Montana. The dorsal scales are keeled and there are normally 8 upper labial scales.

*Young*: The coloration of young snakes is similar to that of the adults; young are live-born. Females give birth to 4-19 young during the summer (Stebbins 1985).

Similar species: See Common Garter Snake.

Habitat and Habits: The habitat and habits of the Western Terrestrial Garter Snake are similar to the Common Garter Snake, i.e., they are found in most habitats but are particularly common around wetlands.

Surveying: Timed sight surveys may be conducted around wetlands and riparian feeding areas or at denning areas where higher concentrations of garter snakes occur; clear mornings are the best survey times. Much distributional information may come from recording incidental sightings. More intensive research and survey projects may use funnel traps in combination with drift fences, or mark-recapture or radiotelemetry techniques.

Status: Given the small number of recent records from throughout the area, all records should be documented until the distribution is better understood; of particular interest would be documentation of denning sites.

Montana Natural Heritage Program Rank: G5 S5.

**Plains Garter Snake** (*Thamnophis radix*) **ARADB36100**

Description: The Plains Garter Snake ranges from 16-42" in length and has a dorsal background color of olive, brown, or black. It has a prominent orange or yellow dorsal stripe and a greenish-yellow stripe on each side located on the 3rd and 4th scale rows above the belly scales. It typically has black vertical bars on the upper lips.

*Young*: Young are live-born and resemble adults.

Similar species: The other garter snakes found in Montana have the lateral yellow lines on the 2nd and 3rd scale rows above the belly scales.

Habitat and Habits: Plains Garter Snakes are found in prairie habitats but are most common around wetland areas, where they feed around permanent and semi-permanent water bodies. In 1998, as many as 22 individuals, both adults (80-85 cm total length) and juveniles (30-40 cm total length) were seen within a 400 m stretch of shoreline at a single site (Blackfoot Reservoir, Carter County); most were sunning in or near shallow water around the reservoir with little emergent vegetation present. Fish, frogs, toads, mice and invertebrates are the most common food items in the diet of the Plains Garter Snake (Hammerson 1982a, Baxter and Stone 1985). Typical of most garter snakes, they emit a noxious secretion when handled and can be aggressive when disturbed. The Plains Garter Snake is a live-bearer, giving birth to 9-21 young during mid- to late-summer in Colorado (Hammerson 1982a). In 1998, this species was documented during surveys between 28 April and 24 July.

Surveying: Timed sight surveys may be conducted around wetlands and riparian feeding areas or at denning areas where higher concentrations of garter snakes occur; clear mornings may be the best survey times. Much distribution information may come from recording incidental sightings. More intensive research may be done using funnel traps in combination with drift fences. More intensive research and survey projects may use mark-recapture or radiotelemetry techniques.

Status: This species is found over much of eastern Montana, particularly in the far eastern and north-central portions of the state. It is the most common garter snake in eastern Montana. Former status is unclear due to confusion in the identification of the 3 garter snakes that occur in the plains region. It should be watched for and any sightings should be documented with a description written at the time of observation, including how *T. radix* was distinguished from the other garter snakes. Of particular interest would be documentation of any denning sites located.

Montana Natural Heritage Program rank: G5 S4.

Potential Species:

**Wood Frog** (*Rana sylvatica*)

This species is not yet known to occur in Montana, although there are a couple of non-breeding records from inappropriate habitat that are considered as introductions. The species might occur in eastern Montana in the Big Horn Mountains of Big Horn County. Wood Frogs have been documented from the Wyoming portion of the mountain range (Dunlap 1977). Wood Frogs are found near water in forested habitats, especially in small natural ponds and sometimes in backwaters and beaver ponds. It is unlikely to be documented on lands under BLM stewardship in eastern Montana. Adults have a prominent black facial mask extending from the snout to behind the external ear drum. There may be some spotting on the back, and the belly is white to cream-colored.

Rank: G5 S2. A Species of Special Concern.

## RECOMMENDATIONS

1) Incidental sightings of amphibians and reptiles from the Lewistown District should be recorded and forwarded to the Natural Heritage Program. Of particular interest are all observations and locations of breeding amphibians (tadpoles and/or eggs) and all reptiles. Use Reichel and Flath (1995) as an identification aid. Vouchers of amphibian tadpoles can be sent to the Natural Heritage program for identification. The Natural Heritage website has an online form for submitting herp observation data at http://nris.mt.gov/mtnhp/index.html.

2) Due to the time constraints and the large area covered in this survey, it should not be regarded as a definitive index of all the amphibians and reptiles or their presence on the surveyed area. The secretive habits of many amphibians and reptiles, and our lack of knowledge regarding their reproductive behavior make it difficult to assess their overall status. We recommend that additional surveys be conducted.

3) When a more complete picture of breeding locations for amphibians are identified in the area, long-term monitoring of typical marsh-pond habitats should be set up at several sites in order to evaluate relative numbers and breeding success of the more common species: Tiger Salamander, Western Chorus Frog, Woodhouse's Toad, Northern Leopard Frog, Plains Garter Snake, and Common Garter Snake. Particular attention needs to be given to any toad and Northern Leopard Frog breeding sites found. Life history and ecology of the amphibians in Montana is poorly known for most species. Long-term monitoring will give us information on timing of breeding and habitat requirements needed for successful reproduction.

4) Recent studies have examined amphibians' use of the terrestrial area surrounding wetland areas. The aim of those studies is to establish baseline data for determining appropriate buffer distances from wetland edges for protection of amphibians. Using data from six salamander species, Semlitsch (1998) found the mean distance that adult salamanders were found away from aquatic habitats was 125 meters. Although studies have not been conducted for species occurring in Montana, it is becoming increasingly apparent that protecting terrestrial buffers are around wetlands are important in conserving biological diversity (Semlitsch 1998).

## BIBLIOGRAPHY


Baxter, G. T. and M. D. Stone. 1985. Amphibians and reptiles of Wyoming. Wyoming Game and Fish Department. Cheyenne, Wyoming. 137 pp.

Bergeron, D. No date. Terrestrial wildlife survey, Coal Creek Mine Area, Montana, 1977-1978. West. Tech. & Eng., Inc., Helena.

Bernard, S. R. and K. F. Brown. 1977. Distribution of mammals, reptiles, and amphibians by BLM physiographic regions and A. W. Kuchler's associations for the eleven Western States.

Black, J. H. 1967. A blue leopard frog from Montana. Herpetologica 23 (4):314-315.

Black, J. H. 1969. The frog genus *Rana* in Montana. Northwest Sci. 43:191-195.

Black, J. H. 1970. Amphibians of Montana. Montana Fish & Game Dept., Pub. No. 1 of Animals of Montana Series.

Black, J. H. 1970. Some aspects of the distribution, natural history and zoogeography of the toad genus *Bufo* in Montana. M.S. thesis, University of Montana, Missoula.

Black, J. H. 1970. Turtles of Montana. Montana Wildlife, Animals of Montana Series 2:26-32.

Black, J. H. 1970. Unusual forms of boreal toads Bufo boreas (Amphibia: Bufonidae) in Glacier National Park, Montana. Proc. Okla. Acad. Sci. 50: 127-128.

Black, J. H. 1971. The toad genus *Bufo* in Montana. Northwest Sci. 45: 156-162.

Black, J. H. and A. M. Bragg. 1968. New additions to the herpetofauna of Montana. Herpetologica 24:247.

Black, J. H. and R. B. Brunson. 1971. Breeding behavior of the boreal toad *Bufo boreas boreas* (Baird and Girard) in western Montana. Great Basin Nat. 31: 109-113.

Black, J. H. and V. Craig (eds.). 1970. Amphibians of Montana. Montana Wildlife, Animals of Montana Series 1:1-32.

Bragg, A. N. 1940. Observations on the ecology and natural history of *Anura*. I. Habits, habitat and breeding of *Bufo cognatus* say. Amer. Nat. 74:322-438.

Breckenridge, W. J. and J. R. Tester. 1961. Growth, local movements, and hibernation of the Manitoba toad, *Bufo hemiophrys*. Ecology 42:637-646.

Brunson, R. B. 1952. Recent collections of *Bufo boreas boreas* from western Montana. Proc. Montana Acad. Sci. 11:17-19.

Brunson, R. B. 1955. Checklist of the amphibians and reptiles of Montana. Proc. Mont. Academy Sci. 15:27-29.

Brunson, R. B. and H. A. Demaree. 1951. The herpetology of the Mission Mountains, Montana. Copeia 1951:306-308.

Bureau of Land Management. 1982. Bloomfield - North Fork baseline inventories - wildlife. Miles City.

Bury, R. B., P. S. Corn, K. B. Aubry, F. F. Gilbert and L. L. C. Jones. 1991. Aquatic amphibian communities in Oregon and Washington. USDA For. Serv., Pac. NW Res. Station Gen. Tech Rep. PNW-GTR-285:353-362.

Camp, Dresser, and McKee, Inc. 1981. Anaconda Stillwater project 12-month environmental baseline report. Tech. Rpt. for Anaconda Copper Co.

Carey, C. 1993. Hypothesis concerning the causes of the disappearance of boreal toads from the mountains of Colorado. Conservation Biology 7(2):355-362.

Conant, R. 1975. A field guide to reptiles and amphibians of eastern and central North America. Second edition. Houghton Mifflin Co., Boston. xvii + 429 pp.

Corn, P. S. No Date. Comment on the occurrence of *Pseudacris clarki* in Montana. Bull. Chi. Herp. Soc. 15(3):77-78.

Corn, P. S. and J. C. Fogelman. 1984. Extinction of montane populations of northern leopard frog (*Rana pipiens*) in Colorado. J. Herpetol. 18:147-152.

Craig, V. No date. The Axolotl: "Walking Fish." Montana Outdoors? 2 pp.

Davis, C. V. and S. E. Weeks. 1963. Montana Snakes. Montana Dept. of Fish and Game, Helena. pp. 1-10.

Dood, A. R. 1980. Terry Badlands nongame survey and inventory: final report. Montana Department of Fish, Wildlife, and Parks BLM Contract #YA-512-CT8-217. 70 pp.

Econ, Inc. 1974. Terrestrial wildlife inventory for the Lame Jones and Ismay coal lease tracts. Tech. Rpt.

Ernst, C. H. 1971. *Chrysemys picta*. Cat. Am. Amph. Rep. 106.1-106.4.

Ernst, C. H., J. E. Lovich, and R. W. Barbour. 1994. Turtles of the United States and Canada. Smithsonian Institution Press, Washington, D.C. 578 pp.

Farmer, P. J. and K. Burgess. 1983. Jardine area baseline terrestrial wildlife study, May 15, 1981-May 15, 1982, for Homestake Mining Co. Westech, Inc., Helena.

Farmer, P. J. and K. Burgess. 1984. Jardine area baseline terrestrial wildlife study. Westech, Inc., Helena.

Farmer, P. J. No date. Terrestrial wildlife survey, Pearl area, Montana, June, 1976 - June, 1977. Westech, Inc., Helena.

Farmer, P. J., S. B. Heath, D. J. Bergeron and K. L. Scow. 1985. Montana Tunnels project-baseline terrestrial wildlife study. *A report* to Centennial Minerals, Inc. Westech, Inc., Helena.

Finch, D. M. 1992. Threatened, endangered, and vulnerable species of terrestrial vertebrates in the Rocky Mountain Region. USFS General Technical Rep. RM-215. 38 pp.

Fitch, H. S. 1980. *Thamnophis sirtalis*. Cat. Am. Amph. Rep. 270.1-270.4.

Fitch, H. S. 1983. *Thamnophis elegans*. Cat. Am. Amph. Rep. 320.1-320.4.

Fitch, H. S. and T. P. Maslin. 1961. Occurrence of the garter snake, *Thamnophis sirtalis*, in the Great Plains and Rocky Mountains. University of Kansas Publications, Museum of Natural History 13(5):289-308.

Flath, D. L. 1981. Vertebrate species of special concern. Montana Department of Fish, Wildlife, and Parks. 74 pp.

Flath, D. L. 1984. Vertebrate species of special interest or concern: mammals, birds, reptiles, amphibians, fishes. Wildlife Division, Montana Department of Fish, Wildlife, and Parks. 76 pp.

Gehlbach, F. R. 1967. *Ambystoma tigrinum*. Cat. Am. Amph. Rep. 52.1-52.4.

Gibbons, J. W., S. S. Novak and C. H. Ernst. 1988. *Chelydra serpentina*. Cat. Am. Amph. Rep. 420.1-420.4.

Groves, C. R. and C. Peterson. 1992. Distribution and population trends of Idaho amphibians as determined by mail questionnaire. Unpubl. Rep. Idaho Dept Fish Game, Boise. 16 pp.

Halliday, T., and K. Adler. 1991. Encyclopedia of reptiles and amphibians. Facts on File, New York. 143 pp.

Hammerson, G. A. 1982a. Amphibians and reptiles in Colorado. Colorado Division of Wildlife, Denver. vii + 131 pp.

Hammerson, G. A. 1982b. Bullfrog eliminating leopard frogs in Colorado? Herpetol. Rev. 13:115-116.

Hendricks, P. 1996. Geographical distribution. *Thamnophis elegans vagrans*. Herpetological Review 27(2):89.

Hendricks, P., and J. D. Reichel. 1996. Preliminary amphibian and reptile survey of the Ashland District, Custer National Forest: 1995. Montana Natural Heritage Program. Helena. 79 pp.

Heyer, W. R., M. A. Donnelly, R. W. McDiarmid, L. C. Hayek, and M. S. Foster (eds.). 1994. Measuring and monitoring biological diversity: Standard methods for amphibians. Smithsonian Institute Press, Washington, D.C. 364 pp.

Holroyd, G. L., G. Burns and H. C. Smith (eds). 1991. Proceedings of the second endangered species and prairie conservation workshop. Provincial Museum of Alberta, Nat. Hist. Occ. Pap. 15. 284 pp.

Jellison, W. L. and J. H. Black. 1970. Tularemia in Montana and turtles of Montana. Mt. Wildlife, Nov. 1970. Mont. Fish & Game Dept.

Kerfoot, W. C. 1968. Geographic variability of the lizard, *sceloporus graciosus* Baird and Girard, in the eastern part of its range. Copeia 1968:139-152.

Koch, E. D., and C. R. Peterson. 1995. Amphibians and reptiles of Yellowstone and Grand Teton national parks. University of Utah Press. Salt Lake City. 188 pp.

Koonz, W. H. 1993. Amphibians in Manitoba. pp. 273-275. *in*: Holroyd, G. L., H. L. Dickson, M. Regnier and H. C. Smith (eds). Proceedings of the Third Prairie Conservation and Endangered Species Workshop. Provincial Museum of Alberta, Nat. Hist. Occ. Pap. 19.

Leonard, W. P., H. A. Brown, L. L. C. Jones, K. R. McAllister and R. M. Storm. 1993. Amphibians of Washington and Oregon. Seattle Audubon Soc., Seattle. 168 pp.

Mackie, R. J. and G. L. Dusek. 1993. A bibliography of Montana wildlife literature through 1992, DRAFT. Wildlife Management Programmatic Environmental Impact Statement Project, Montana Department of Fish, Wildlife, and Parks. 280 pp.

Marnell, L. F. 1997. Herpetofauna of Glacier National Park. Northwestern Naturalist 78:17-33.

Martin, P. R. 1980. Terrestrial wildlife habitat inventory in southeastern Montana. Montana Department of Fish, Wildlife, and Parks and BLM.

Martin, P. R. 1980. Terrestrial wildlife inventory in selected coal areas of Montana. Montana Department of Fish, Wildlife, and Parks and BLM.

Matthews, W. C. 1981. Broadus-Pumpkin Creek baseline inventory - wildlife. BLM, Miles City.

McEneaney, T. and J. Jensen. 1974. The reptiles and amphibians of the Charles M. Russell National Wildlife Refuge, 1974. Unpubl. mimeo. 3 pp.

Micken, L. 1968. Some summer observations on the tiger salamander, *Ambystoma tigrinum*, in Blue Lake, Madison County Montana. Proc. Mont. Acad. Sci. 28:77-80.

Micken, L. 1971. Additional notes on neotenic *Ambystoma tigrinum melanostictum* in Blue Lake, Madison County, Montana. Proc. Mont. Acad. Sci. 31:62-64.

Miller, J. D. 1978. Observations on the diet of *Rana pretiosa*, *Rana pipiens*, and *Bufo boreas* from western Montana. Northw. Sci. 52:243-249.

Montana Department of State Lands and U.S. Office of Surface Mining. 1982. Final EIS, Western Energy Company's Rosebud Mine Area C, Block 1.

Montana Department of State Lands. No date. Draft EIS, proposed plan of mining and reclamation, Zortman Mining Company and Landusky Mining Company, Phillips County, Montana.

Mosimann, J. E. and G. B. Rabb. 1952. The herpetology of Tiber Reservoir Area, Montana. Copeia 1952:23-27.

Mueller, C. F. 1969. Temperature and energy characteristics of the sagebrush lizard (*Sceloporus graciosus*) in Yellowstone National Park. Copeia 1969:153-160.

Mueller, F. C. and R. E. Moore. 1969. Growth of the sagebrush lizard, *Sceloporus graciosus*, in Yellowstone National Park. Herpetologica 25:35-38.

Nelson, D. J. 1948. *Lampropeltis triangulum gentilis* in Montana. Herpetologica 4:170.

Nelson, D. J. 1950. *Lampropeltis triangulum gentilis* in Montana. Herpetologica 6:41.

Nussbaum, R. A., E. D. Brodie, Jr. and R. M. Storm. 1983. Amphibians and reptiles of the Pacific Northwest. Univ. Press of Idaho. 332 pp.

Olson-Elliott and Associates. 1979. Environmental impact of the northern tier pipeline in Montana. Tech. Report prepared for Montana Department of Natural Resources and Conservation.

Olson-Elliott and Associates. 1980. Terrestrial wildlife inventory, Montco wildlife study area. Tech. Report for Montco. Billings.

Ortenburger, A. I. 1921. An eastern record and note on *Charina bottae* (Blainville). Copeia 100:84.

Peterson, C. R., E. D. Koch and P. S. Corn. 1992. Monitoring amphibian populations in Yellowstone and Grand Teton National Parks. Unpubl. Report to Univ. Wyo. Natl. Park Serv. Res. Center. 37 pp.

Phillips, K. 1990. Where have all the frogs and toads gone? BioScience 40:422-424.

Platt, D. R. 1969. Natural history of the Hognose Snakes *Heterodon platyrhinos* and *Heterodon nasicus*. Univ. Kan. Publ., Mus. Nat. History 18(4):253-420.

Reel, S. 1989. Vest-pocket preserves. Montana Outdoors 20(2):27-29.

Reel, S., L. A. Schassberger, and W. Ruediger. 1989. Caring for our natural communities: Region 1 - threatened, endangered and sensitive species program. USDA, USFS, Northern Region, Missoula.

Reichel, J. D. 1995a. Preliminary amphibian and reptile survey of the Lewis and Clark National Forest: 1994. Montana Natural Heritage Program. Helena. 92 pp.

Reichel, J. D. 1995b. Preliminary amphibian and reptile survey of the Sioux District of the Custer National Forest: 1994. Montana Natural Heritage Program. Helena. 75 pp.

Reichel, J. D. 1996. Preliminary Colonial Nesting Bird Survey of the Bureau of Land Management Lewistown District: 1995. Montana Natural Heritage Program. Helena. 97 pp.

Reichel, J. D. and D. L. Flath. 1995. Identification guide to the amphibians and reptiles of Montana. Montana Outdoors 26(3):15-34.

Scow, K. L. 1978. Terrestrial wildlife survey, Zortman and Landusky areas, Little Rocky Mountains, MT. Tech. Rpt. for Zortman and Landusky Mining Co., Inc. Westech, Inc.

Semlitsch, R. D. 1998. Biological delineation of terrestrial buffer zones for pond-breeding salamanders. Conservation Biology 12:1113-1119.

Semlitsch, R. D., and J. R. Bodie. 1998. Are small, isolated wetlands expendable? Conservation Biology 12:1129-1133.

Smith, H. M. 1978. A guide to field identification Amphibians of North America. Golden Press, New York.

Smith, H. M. and E. D. Brodie, Jr. 1982. Reptiles of North America. Golden Press, New York. 240 pp.

Stebbins, R. C. 1985. A field guide to western reptiles and amphibians. Houghton Mifflin Co., Boston. xiv + 336 pp.

Stewart, G. R. 1977. *Charina, c. bottae*. Cat. Am. Amph. Rep. 205.1-205.2.

Stuart, L. C. 1930. An extension of the range of *Coluber constrictor mormon* (Baird and Girard). Copeia 1930:44.

Sweet, S. S. and W. S. Parker. 1990. *Pituophis melanoleucus*. Cat. Am. Amph. Rept. 474.1-474.8.

Thompson, L. S. 1982. Distribution of Montana amphibians, reptiles, and mammals. Montana Audubon Council. 24 pp.

Timkin, R. L. and D. G. Dunlap. 1965. Ecological distribution of the two species of *Bufo* in southeastern South Dakota. Proc. S. D. Acad. Sci. 44:113-117.

U.S. Forest Service and Montana Department of State Lands. 1985. Jardine joint venture project.

U.S. Forest Service and Montana Department of State Lands. 1986. Jardine joint venture project, final EIS.

U.S. Geological Survey and Montana Department of State Lands. 1979. Draft proposed mining and reclamation plan, Pearl Mine, Big Horn County, Montana.

U.S. Geological Survey and Montana Department of State Lands. No date. Draft environmental statement, proposed mining and reclamation plan, Spring Creek Mine, Big Horn County, Montana.

VTN. No date. Second year's analysis of terrestrial wildlife on proposed mine access and railroad routes in southern Montana and northern Wyoming, March 1979 - February 1980. Tech. Rep. for Shell Oil Co. VTN Wyoming, Inc.

Webb, R. G. 1962. North American soft-shelled turtles (Family Trionychidae). Univ. Kan. Publ., Mus. Nat. Hist. 13:429-611.

Webb, R. G. 1973. *Trionyx spiniferus*. Cat. Amer. Amph. and Rept. 140.1-4.

Werner, J. K. 1974. *Phrynosoma douglassi brevirostre*. Herp Review 5(1): 20.

Werner, K. and J. D. Reichel. 1994. Amphibian and reptile survey of the Kootenai National Forest: 1994. Montana Natural Heritage Program. 105 pp.

Werner, J. K., T. Plummer, and J. Weaselhead. 1998. Amphibians and reptiles of the Flathead Indian Reservation. Intermountain Journal of Science 4:33-49.

Westech, Inc. [Western Technology and Engineering]. 1981. The effects of the Tongue River Railroad on terrestrial wildlife. Technical Report for Tongue River Railroad Co.

Westech, Inc. [Western Technology and Engineering]. 1982. Results of Phase one, step one, Little Rockies Project. Tech. Rpt. for Meridan Land and Mineral Co.

Westech, Inc. [Western Technology and Engineering]. 1982. Wildlife reconnaissance, Cypress International Yellowstone Mine. Prepared for Hydrometrics, Inc.

Westech, Inc. [Western Technology and Engineering]. 1987. Valley View Hills: baseline easement report. The Nature Conservancy, Big Sky Field Office, Helena. 44 pp. plus appendices.

Westech, Inc. [Western Technology and Engineering]. No date. Preliminary wildlife reconnaissance, Ruby and Little Ben mine areas, Little Rocky Mountains, Montana. Technical Report for Zortman and Landusky Mining Companies.

Western Ecological Services Co. 1983. Wildlife inventory of the Knowlton known recoverable coal resource area, MT. Prepared for U.S. Department of the Interior, BLM Contract VA-553-RFP2-1027.

Western Ecological Services Co. 1983. Wildlife inventory of the Southwest Circle known recoverable coal resource area, Montana. Prepared for U.S. Department of the Interior, BLM. Contract YA-553-RFP2-1027.

Wheeler, G. C. and J. Wheeler. 1966. The amphibians and reptiles of North Dakota. University of North Dakota, Grand Forks. 103 pp.

Wilson, L. D. 1978. *Coluber constrictor*. Cat. Am. Amph. Rep. 218.1-218.4.

Yoffe, E. 1992. Silence of the frogs. New York Times Magazine 13 Dec. 1992:36-39, 64-66, 76.

# APPENDIX 1.

# Amphibians and reptile survey sites in the Lewistown District 1995 - 1998.

Appendix 1. Survey sites within the BLM Lewistown district with location and species information.

| SURV | COUNTY | TR | S | Q | SPEC* | MO | DA | YEAR | START | MIN | ELEV | SQ m | Y/N | SITE: | NOTE: |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| MT970004 | Blaine | 025N017E | 11 | NWSW | PSTR, RAPI | 5 | 22 | 1997 | 1620 | 60 | 3425 | 1280 | Y | Sand Ck trib., pond | dip net |
| MT970002 | Blaine | 025N018E | 15 | NESE | PSTR | 5 | 22 | 1997 | 1500 | 10 | 3460 | 700 | Y | Roadside ditch | Dip net, Hand collected. MTHP - 2181 |
| MT970095 | Blaine | 025N019E | 10 | SWSW | AMTI, PSTR | 6 | 20 | 1997 | 1635 | 45 | 3405 | 2400 | Y | Pond 1 mi SE of Bear Paw Springs | |
| MT970096 | Blaine | 025N019E | 14 | NENE | PSTR, RAPI | 6 | 20 | 1997 | 1735 | 40 | 3311 | 24000 | Y | Pond off Christenson Branch of Bullwacker Coulee | |
| MT970104 | Blaine | 025N020E | 2 | N2 | PSTR | 6 | 21 | 1997 | 1315 | 50 | 3220 | 35000 | Y | Butch Reservoir | |
| MT980056 | Blaine | 025N020E | 2 | NW | PSTR | 5 | 25 | 1998 | 1420 | 70 | 3264 | 37200 | Y | Butch Reservoir, 12 mi N of Missouri River | F0970;S0970 |
| MT970097 | Blaine | 025N020E | 6 | SENW | PSTR | 6 | 20 | 1997 | 1855 | 35 | 3342 | 11700 | Y | Bud Reservoir | |
| MT970106 | Blaine | 025N021E | 3 | NESE | AMTI, PSTR | 6 | 21 | 1997 | 1650 | | 3235 | | Y | Pond on ridge W of Hay Coulee | |
| MT970103 | Blaine | 025N021E | 5 | | PSTR, THRA | 6 | 21 | 1997 | 1430 | 40 | 2800 | 2400 | Y | Cow Creek crossing reservoir | |
| MT970100 | Blaine | 026N020E | 20 | SWNE | PSTR | 6 | 21 | 1997 | 910 | 50 | 3463 | 30000 | Y | Blanch Reservoir | |
| MT970101 | Blaine | 026N020E | 20 | NW | PSTR | 6 | 21 | 1997 | 1025 | | 3490 | 1200 | Y | Pond 0.3 mi NE of Blanch Reservoir | |
| MT970099 | Blaine | 026N020E | 32 | NESW | PSTR | 6 | 20 | 1997 | 1945 | 20 | 3200 | 1500 | Y | Flooded area on Bullwacker Creek | |
| MT970098 | Blaine | 026N020E | 33 | NENW | PSTR | 6 | 20 | 1997 | 2025 | 45 | 3398 | 48000 | Y | Brush Shack Reservoir | |
| MT970102 | Blaine | 026N020E | 34 | SW | PSTR, THRA | 6 | 21 | 1997 | 1150 | 45 | 3376 | 52500 | Y | Right Coulee Reservoir | |
| MT980057 | Blaine | 026N020E | 34 | SW | PSTR | 5 | 25 | 1998 | 1555 | 45 | 3231 | 17100 | Y | Reservoir, 12 mi N of Missouri River | F0971;S0971 |
| MT980054 | Blaine | 026N021E | 23 | NW | BUWO, PSTR | 5 | 25 | 1998 | 1130 | 60 | 2854 | 15750 | Y | Cow Creek, 14 mi N of Missouri River | F0968;S0968 |
| MT970105 | Blaine | 026N021E | 34 | NWSE | PSTR, THRA | 6 | 21 | 1997 | 1605 | 30 | 3240 | 5400 | Y | Pond at NW end of Hay Coulee | |
| MT950302 | Blaine | 033N020E | 2 | SESE | PSTR | 7 | 1 | 1995 | 825 | 5 | 2640 | 4000 | Y | Pond 33 | |
| MT950264 | Blaine | 033N020E | 12 | NENW | PSTR | 7 | 1 | 1995 | 810 | 10 | 2620 | 8000 | Y | Pond 27 | |
| MT950265 | Blaine | 033N021E | 7 | NW | PSTR | 7 | 1 | 1995 | 655 | 5 | 2610 | 8000 | Y | Pond 28 | |
| MT950306 | Blaine | 033N021E | 7 | SE | PSTR | 7 | 1 | 1995 | 704 | 6 | 2580 | 4000 | Y | Pond 32 | |
| MT950261 | Blaine | 034N020E | 9 | SENE | PSTR | 7 | 1 | 1995 | 1840 | 5 | 2780 | 8000 | Y | Pond 2 | |
| MT950285 | Blaine | 034N020E | 9 | S | PSTR | 7 | 1 | 1995 | 1825 | 5 | 2780 | 80000 | Y | Pond 1 | |
| MT950257 | Blaine | 034N020E | 10 | NENE | PSTR | 7 | 1 | 1995 | 1920 | 5 | 2820 | 20000 | Y | Pond 7 | |
| MT950259 | Blaine | 034N020E | 10 | SESW | PSTR | 7 | 1 | 1995 | 1815 | 5 | 2780 | 20000 | Y | Pond 1A | |
| MT950269 | Blaine | 034N020E | 11 | SEE | PSTR, THRA | 7 | 1 | 1995 | 1950 | 15 | 2810 | 40000 | Y | Ponds 9 & 10 | |
| MT950274 | Blaine | 034N020E | 13 | SESE | PSTR | 7 | 1 | 1995 | 1155 | 5 | 2720 | 4000 | Y | Pond 19 | |
| MT950295 | Blaine | 034N020E | 14 | M | PSTR | 7 | 1 | 1995 | 1706 | 12 | 2760 | 8000 | Y | Pond 14 | |
| MT950297 | Blaine | 034N020E | 14 | NWSW | PSTR | 7 | 1 | 1995 | 1730 | 7 | 2775 | 12000 | Y | Pond 13 | |

*Species abbreviations: Ambystoma macrodactylum AMMA; Ambystoma tigrinum AMTI; Bufo boreas BUBO; Bufo cognatus BUCO, Bufo woodhousii BUWO; Chrysemys picta CHPI; Coluber constrictor COCO; Pseudacris triseriata PSTR; Rana luteiventris RALU (= Rana pretiosa RAPR); Rana pipiens RAPI; Spea bombifrons SPBO; Thamnophis elegans THEL; Thamnophis radix THRA; Thamnophis sirtalis THIS.

Appendix 1. Survey sites within the BLM Lewistown district with location and species information.

| SURV | COUNTY | TR | S | Q | SPEC* | MO | DA | YEAR | START | MIN | ELEV | SQ m | Y/N | SITE: | NOTE: |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| MT950282 | Blaine | 034N020E | 24 | M | PSTR | 7 | 1 | 1995 | 1040 | 15 | 2740 | 480000 | Y | Tule Lake (pond 15) | |
| MT950289 | Blaine | 034N021E | 8 | M | AMTI, PSTR | 7 | 1 | 1995 | 1340 | 16 | 2760 | 160000 | Y | Pond 22 | |
| MT950266 | Blaine | 034N021E | 17 | E | PSTR | 7 | 1 | 1995 | 1325 | 5 | | 20000 | Y | Pond 24 | |
| MT950271 | Blaine | 034N021E | 18 | | AMTI, PSTR | 7 | 1 | 1995 | 1335 | 20 | 2716 | 280000 | Y | Pond 20-Fifteen Mile Creek Reservoir | |
| MT950287 | Blaine | 034N021E | 19 | NENE | PSTR | 7 | 1 | 1995 | 1220 | 15 | 2750 | 16000 | Y | Pond 21 | |
| MT950291 | Blaine | 034N021E | 20 | NE | PSTR | 7 | 1 | 1995 | 1303 | 7 | 2760 | 4000 | Y | Pond 23 | |
| MT950279 | Blaine | 034N021E | 30 | NWNW | PSTR | 7 | 1 | 1995 | 1030 | 5 | 2690 | 4000 | Y | Pond 16 | |
| MT950310 | Blaine | 034N021E | 31 | SWSW | PSTR | 7 | 1 | 1995 | 1005 | 25 | 2650 | 32000 | Y | Pond 31 | |
| MT960034 | Blaine | 034N025E | 24 | NW | PSTR | 7 | 10 | 1996 | 1730 | 35 | | 2040000 | Y | Black Coulee NWR | |
| MT960221 | Blaine | 035N017E | 10 | SE | PSTR | 6 | 4 | 1996 | 1000 | 45 | | 218122 | Y | Ca. 20 mi NE of Havre | 100+ PSTR, 20 sweeps. |
| MT960028 | Blaine | 035N018E | 6 | S2 | PSTR, THRA | 6 | 4 | 1996 | 1915 | 30 | | 1280000 | Y | McLaren Reservoir, Holm WPA | |
| MT960201 | Blaine | 035N018E | 24 | SW | PSTR | 6 | 4 | 1996 | 1735 | 40 | | 2103912 | Y | North Chinook Reservoir | |
| MT970091 | Blaine | 035N019E | 6 | NW | PSTR, THRA | 6 | 21 | 1997 | 1000 | 30 | 2600 | 10000 | Y | Stock reservoir at road side | |
| MT960027 | Blaine | 036N018E | 31 | S2 | PSTR | 6 | 4 | 1996 | 1950 | 20 | | 200000 | Y | Holm Reservoir, Holm WPA | |
| MT970092 | Blaine | 037N018E | 33 | NW | PSTR | 6 | 21 | 1997 | 820 | 10 | 2700 | 400 | Y | Upper Reservoir ca 2 mi NE of Battle Creek | Baird's sparrow also observed |
| MT970093 | Blaine | 037N018E | 33 | SW | PSTR | 6 | 20 | 1997 | 1935 | 15 | 2680 | 100000 | Y | Lower Reservoir ca 2 mi NE of Battle Creek | Baird's sparrow also observed |
| MT970084 | Blaine | 037N025E | 14 | NW | PSTR | 6 | 22 | 1997 | 920 | 15 | 2960 | 60000 | Y | Pothole (enhanced) | Baird's Sparrow also observed. |
| MT970085 | Blaine | 037N025E | 26 | NW | PSTR | 6 | 22 | 1997 | 755 | 20 | 2950 | 40000 | Y | Small "enhanced" wetland, sedge pothole | Baird's Sparrow also observed. |
| MT970083 | Blaine | 037N026E | 26 | SE | AMTI, PSTR | 6 | 22 | 1997 | 1130 | 30 | 2900 | 60000 | Y | Pothole (enhanced) | Baird's Sparrow also observed. |
| MT950229 | Cascade | | 0 | | RALU | 6 | 22 | 1995 | 1345 | 35 | 7360 | | Y | Harley Park | UTM: 5197150N 511900E |
| MT950230 | Cascade | | 0 | | RALU | 6 | 22 | 1995 | 1115 | 60 | 7070 | | Y | O'Brien Cr. headwaters/Lone Tree Park | UTM 5191750N 518080E |
| MT950548 | Cascade | 013N008E | 0 | | RALU | 7 | 26 | 1995 | 1230 | 30 | 7100 | | Y | Beaver ponds at head of Belt Creek. | |
| MT980156 | Cascade | 013N008E | 27 | S2 | RALU | 5 | 28 | 1998 | 1430 | 60 | 7120 | 8000 | Y | Headwaters of Belt Creek | |
| MT980155 | Cascade | 014N007E | 33 | SW | RALU | 5 | 28 | 1998 | 1600 | 45 | 7360 | 8000 | Y | Harley Park | |
| MT960376 | Choteau | 021N011E | 17 | MWNE | AMTI, PSTR | 6 | 3 | 1996 | 1145 | 15 | 3200 | | Y | Pond just NE of Kingsbury Lake, Kingsbury WPA | |
| MT960377 | Choteau | 021N011E | 17 | + | PSTR | 6 | 3 | 1996 | 1000 | 420 | 3180 | 5569342 | Y | Kingsbury Lake, Kingsbury WPA | |
| MT960382 | Choteau | 021N011E | 18 | SENW | AMTI | 6 | 3 | 1996 | 1415 | 6 | 3220 | | Y | NW pond of Kingsbury Lake | |
| MT980161 | Choteau | 024N009W | 9 | SE | BUBO | 6 | 30 | 1998 | 1230 | 60 | 6000 | 150 | Y | Green Gulch, S Fork Teton R (on Rd 3308, ca 1 mi out) | |
| MT950219 | Choteau | 026N012E | 13 | | BUWO | 6 | 12 | 1995 | 1415 | 5 | 2715 | | Y | 1 mi up river, Rattlesnake Coulee. | |

*Species abbreviations: Ambystoma macrodactylum AMMA; Ambystoma tigrinum AMTI; Bufo boreas BUBO; Bufo cognatus BUCO, Bufo woodhousii BUWO; Chrysemys picta CHPI; Coluber constrictor COCO; Pseudacris triseriata PSTR; Rana luteiventris RALU (= Rana pretiosa RAPR); Rana pipiens RAPI; Spea bombifrons SPBO; Thamnophis elegans THEL; Thamnophis radix THRA; Thamnophis sirtalis THIS.

Appendix 1. Survey sites within the BLM Lewistown district with location and species information.

| SURV | COUNTY | TR | S | Q | SPEC* | MO | DA | YEAR | START | MIN | ELEV | SQ m | Y/N | SITE: | NOTE: |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| MT960375 | Choteau | 029N012E | 19 | | PSTR | 6 | 2 | 1996 | 1420 | 95 | | 2961280 | Y | Lonesome Lake | 10 adults, 9 larvae observed. |
| MT960404 | Fergus | 011N016E | 20 | SESW | PSTR, RAPI | 6 | 17 | 1996 | 1335 | 55 | 4610 | 53058 | Y | 1.2 mi NNE of Judith Gap | |
| MT950389 | Fergus | 019N021E | 14 | SE | RAPI | 7 | 14 | 1995 | 1210 | 8 | | 4000 | Y | Pond 7 | |
| MT950380 | Fergus | 019N021E | 28 | SWNE | PSTR | 7 | 14 | 1995 | 1515 | 15 | | 4000 | Y | Pond 9 | |
| MT960423 | Fergus | 020N026E | 29 | SE | SPBO | 6 | 19 | 1996 | 1730 | 60 | 2732 | 95173 | Y | Buffalo Wallow Reservoir | |
| MT960078 | Fergus | 021N024E | 8 | NE | PSTR | 6 | 14 | 1996 | 1105 | 50 | 2887 | 8800 | Y | CMR NWR - Res. pond off Sand Ck Trail (Rd 210) ca. 4 mi E Hwy 191 | |
| MT980103 | Garfield | 013N030E | 20 | NE | BUCO, RAPI | 6 | 24 | 1998 | 1600 | 75 | 2608 | 5400 | Y | Musselshell R tributary on Cnty Rd 500 (Melstone Rd) 8 mi S of Mosby | F1013;S1013 |
| MT950125 | Glacier | 033N010W | 35 | SENE | PSTR | 5 | 19 | 1995 | 1115 | 45 | 4140 | | Y | Blackfoot Gravel Pit Ponds; along Hwy 2 across from Blackfoot townsite | LAT 483426N LONG 1125154W |
| MT970007 | Hill | | | | PSTR, RAPI | 5 | 21 | 1997 | 1615 | 60 | | 6250 | Y | Milk R, along old channel of | |
| MT950252 | Hill | 031N014E | 16 | N2 | RAPI | 6 | 30 | 1995 | 1635 | 16 | 2400 | | Y | Sandy River | |
| MT960203 | Hill | 032N015E | 14 | NW | PSTR | 6 | 3 | 1996 | 1900 | 25 | | 977233 | Y | Halfway Lake WPA. (also called Sands WPA.) | Also SW4 11 and E2 15. |
| MT960231 | Hill | 033N013E | 4 | SW | PSTR | 6 | 2 | 1996 | 1620 | 55 | | 239129 | Y | Eastern-most Chain-of-Lakes | 10+; 20 sweeps. |
| MT960205 | Hill | 033N013E | 5 | NE | PSTR | 6 | 2 | 1996 | 1715 | 35 | | 425550 | Y | Middle Chain-of-Lakes merged with West Chain of Lakes | |
| MT970001 | Hill | 034N012E | 3 | NESE | PSTR | 5 | 21 | 1997 | 1045 | 60 | | 105 | Y | Chain of Lakes pond | |
| MT960227 | Hill | 034N012E | 14 | NE | PSTR | 6 | 2 | 1996 | 1855 | 30 | | 173438 | Y | Lake at N end of Chain-of-Lakes Coulee | |
| MT960229 | Hill | 034N012E | 24 | SE | PSTR | 6 | 2 | 1996 | 1810 | 20 | | 110078 | Y | Ca. 7.5 mi N of Kremlin | 10 tadpoles captured in 20 sweeps; tadpole total length = 1.0 - 2.5 cm. Also in NE sec 25 |
| MT970008 | Hill | 034N012E | 25 | NWNE | PSTR | 5 | 21 | 1997 | 1045 | | | 1050 | Y | Chain of Lakes Coulee pond | |
| MT970006 | Hill | 035N012E | 10 | SE | PSTR, RAPI | 5 | 21 | 1997 | 1440 | 65 | | 37500 | Y | Milk R, old oxbow, channel & river | |
| MT960225 | Hill | 037N012E | 15 | N2 | PSTR | 6 | 3 | 1996 | 1115 | 30 | | 96817 | Y | West end of Wild Horse Lake Bed | 20 sweeps; surprised to find no tiger salamanders present; lake with water because of wet spring; looked like it would dry up. |
| MT960223 | Hill | 037N013E | 6 | NW | PSTR | 6 | 3 | 1996 | 1310 | 37 | | 151543 | Y | Lake on N side of Wild Horse Lake | Lake full from spring rains. 30 sweeps. |
| MT960029 | Hill | 037N015E | 16 | SESW | PSTR | 6 | 3 | 1996 | 1320 | 45 | | 1080000 | Y | Creedmen Coulee NWR | |
| MT950153 | Judith Basin | 011N010E | 10 | SESW | RALU | 6 | 1 | 1995 | 1435 | 15 | 6600 | | Y | Hidden Lake (also section 15) | UTM 5174300N 541600E |
| MT950154 | Judith | 011N010E | 21 | NESE | RALU | 6 | 1 | 1995 | 1320 | 45 | 6650 | | Y | Deadhorse Creek beaver dams | UTM 5171900N 541100E |

*Species abbreviations: Ambystoma macrodactylum AMMA; Ambystoma tigrinum AMTI; Bufo boreas BUBO; Bufo cognatus BUCO, Bufo woodhousii BUWO; Chrysemys picta CHPI; Coluber constrictor COCO; Pseudacris triseriata PSTR; Rana luteiventris RALU (= Rana pretiosa RAPR); Rana pipiens RAPI; Spea bombifrons SPBO; Thamnophis elegans THEL; Thamnophis radix THRA; Thamnophis sirtalis THIS.

Appendix 1. Survey sites within the BLM Lewistown district with location and species information.

| SURV | COUNTY | TR | S | Q | SPEC* | MO | DA | YEAR | START | MIN | ELEV | SQ m | Y/N | SITE: | NOTE: |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| MT980160 | Basin Judith Basin | 019N009E | 9 | NE | RAPI | 6 | 30 | 1998 | 1100 | 20 | 5160 | 2500 | Y | Beaver pond, Upper Highwood Cr | |
| MT950547 | Judith Basin | 019N009E | 22 | | RAPI | 7 | 24 | 1995 | 930 | 30 | 5280 | | Y | Arrow Creek | |
| MT960005 | Judith Basin | 019N009E | 22 | NW | PSTR | 6 | 6 | 1996 | 1230 | 40 | 5322 | 100 | | Seep above Arrow Ck | |
| MT950136 | Lewis & Clark | 013N008W | 5 | NWNW | AMMA, RALU | 5 | 24 | 1995 | 1255 | 35 | 5400 | | Y | Middle Copper Creek drainage in pond. | UTM 5216500N 374800E |
| MT950657 | Lewis & Clark | 015N006W | 20 | NE | RALU | 8 | 31 | 1995 | 1138 | 27 | 5200 | | Y | Upper Blackfoot River marshes | |
| MT950134 | Lewis & Clark | 015N008W | 4 | NW | RALU | 5 | 24 | 1995 | 1720 | 30 | 5350 | | Y | Copper Creek beaver pond near campgrounds. | UTM 5216000N 376900E |
| MT950138 | Lewis & Clark | 016N008W | 17 | SW | AMMA, RALU | 5 | 25 | 1995 | 1343 | 22 | 6430 | | | Pond N of Heart Lake | UTM 5221800N 374900E. |
| MT980147 | Lewis & Clark | 019N009W | 6 | NE | RALU | 5 | 26 | 1998 | 1030 | 60 | 5760 | 100000 | Y | Wood Lake | Contact: M. Enk, USFS - Great Falls |
| MT980148 | Lewis & Clark | 019N009W | 12 | NE | RALU | 5 | 26 | 1998 | 1200 | 90 | 5760 | 50000 | Y | N of Wood Lake - other side of dike in marshy area - small pond near rd | Contact: M. Enk, USFS - Great Falls |
| MT980154 | Lewis & Clark | 020N009W | 23 | NW | PSTR, RALU | 5 | 28 | 1998 | 1430 | 30 | 5540 | 250 | Y | Pond across from Hidden Valley Ranch | |
| MT980158 | Lewis & Clark | 020N010W | 16 | NE | RALU | 6 | 11 | 1998 | 1312 | 58 | 5297 | 7500 | Y | SE of Rd 234 crossing of Benchmark Cr | |
| MT980150 | Lewis & Clark | 020N010W | 23 | SE | RALU | 5 | 26 | 1998 | 1500 | 60 | 5520 | 150000 | Y | Marsh area S of Benchmark airstrip | Contact: M. Enk, USFS - Great Falls |
| MT980149 | Lewis & Clark | 020N010W | 25 | SE | RALU | 5 | 26 | 1998 | 1400 | 60 | 5600 | 100000 | Y | Marshy areas along river ca 2 mi N of Wood Lake | Contact: M. Enk, USFS - Great Falls |
| MT980153 | Lewis & Clark | 021N009W | 15 | SW | RALU, THSI | 5 | 28 | 1998 | 1330 | 30 | 4940 | 12500 | Y | Pond off Beaver/Willow Rd | |
| MT960086 | Meagher | 008N011E | 13 | NWSW | PSTR | 6 | 17 | 1996 | 1120 | 30 | 4779 | | Y | NW side Martinsdale Res. | |
| MT970021 | Petroleum | 012N024E | 12 | NENE | PSTR | 6 | 8 | 1997 | 850 | 50 | | | Y | pond off Flat Willow Creek | |
| MT970019 | Petroleum | 012N025E | 34 | SENW | PSTR | 6 | 8 | 1997 | 1025 | 50 | | | Y | Little Wall Creek Reservior | |
| MT980081 | Petroleum | 012N026E | 3 | NW | PSTR | 5 | 1 | 1998 | 1230 | 75 | 3214 | 3250 | Y | Pike Creek, 12 mi S of Winnett, 0.5 mi W of Hwy 244 | F0928;S0928 |
| MT980102 | Petroleum | 012N031E | 18 | NW | AMTI, THRA | 6 | 24 | 1998 | 1405 | 65 | 2804 | 3000 | Y | Sec 18 Reservoir off of Cty Rd 500 (Melstone Rd), 13 mi S of Mosby | F1012;S1012;Axolotl's dead on shoreline |
| MT970015 | Petroleum | 013N026E | 4 | NW | AMTI, PSTR | 6 | 8 | 1997 | 1530 | 75 | | | Y | pond NE of Yellowstone River | |
| MT970028 | Petroleum | 013N026E | 7 | NE | PSTR, THRA | 6 | 8 | 1997 | 1345 | 75 | | 1000 | Y | Yellow Water Res. | |
| MT980027 | Petroleum | 013N026E | 7 | NENW | RAPI, | 5 | 27 | 1998 | 1530 | 75 | 3000 | | Y | Yellow Water Reservoir, War | |

*Species abbreviations: Ambystoma macrodactylum AMMA; Ambystoma tigrinum AMTI; Bufo boreas BUBO; Bufo cognatus BUCO, Bufo woodhousii BUWO; Chrysemys picta CHPI; Coluber constrictor COCO; Pseudacris triseriata PSTR; Rana luteiventris RALU (= Rana pretiosa RAPR); Rana pipiens RAPI; Spea bombifrons SPBO; Thamnophis elegans THEL; Thamnophis radix THRA; Thamnophis sirtalis THIS.

Appendix 1. Survey sites within the BLM Lewistown district with location and species information.

| SURV | COUNTY | TR | S | Q | SPEC* | MO | DA | YEAR | START | MIN | ELEV | SQ m | Y/N | SITE: | NOTE: |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| MT970020 | Petroleum | 013N026E | 12 | NWSE | THRA AMTI, COCO, THRA | 6 | 8 | 1997 | 1155 | 45 | | | Y | Horse NWR pond off Flat Willow Creek | |
| MT970029 | Petroleum | 014N025E | 14 | NESE | PSTR | 6 | 8 | 1997 | 1720 | 35 | | | Y | pond on tributary to Elk Creek | |
| MT970022 | Petroleum | 015N026E | 25 | SW | PSTR | 6 | 10 | 1997 | 1650 | 30 | | | Y | pond off Cemetary Road | |
| MT970023 | Petroleum | 015N028E | 25 | E2SW | PSTR | 6 | 11 | 1997 | 835 | 65 | | | Y | Gorman Coulee Road | |
| MT960411 | Petroleum | 016N024E | 20 | SE | PSTR, RAPI | 6 | 18 | 1996 | 1105 | 75 | | 555837 | Y | Lewis Reservoir | |
| MT960401 | Petroleum | 016N025E | 29 | NW | PSTR, SPBO | 6 | 17 | 1996 | 1917 | 63 | 3135 | 5844603 | Y | War Horse Reservoir | |
| MT980020 | Petroleum | 016N025E | 29 | NWNW | PSTR | 5 | 31 | 1998 | 1835 | 25 | 3140 | | Y | Inlet canal to War Horse Lake, War Horse NWR | |
| MT970025 | Petroleum | 016N026E | 13 | SWSE | PSTR | 6 | 10 | 1997 | 930 | 40 | | | Y | pond upstream from Vogel Res. | |
| MT980018 | Petroleum | 016N026E | 13 | SWSE | PSTR, THRA | 7 | 3 | 1998 | 1150 | 45 | | | Y | Unnamed stock reservoir ca. 9 mi N of Winnett along Valentine-Dovetail Rd | |
| MT960418 | Petroleum | 016N026E | 31 | N | PSTR, RAPI | 6 | 18 | 1996 | 1715 | | 3095 | 557807 | Y | Little Bear Lake | |
| MT970024 | Petroleum | 016N028E | 34 | NWNW | PSTR, THRA | 6 | 11 | 1997 | 1010 | 50 | | | Y | Reservoir on Cat Creek | |
| MT980019 | Petroleum | 017N024E | 32 | SWSE | AMTI | 7 | 2 | 1998 | 1632 | 41 | 3240 | | Y | Small lake ca. 1.5 mi SW of Blakeslee School, on Duck Cr. | |
| MT970013 | Petroleum | 017N026E | 25 | NE | PSTR, SPBO | 6 | 9 | 1997 | 1930 | 55 | | 300 | Y | South Fork of the Blood Reservoir | |
| MT970018 | Petroleum | 017N026E | 31 | SW | PSTR | 6 | 10 | 1997 | 1505 | | | | Y | Pond 4 mi E of Wild Horse Lake | |
| MT970016 | Petroleum | 017N027E | 8 | NWNE | COCO, PSTR, SPBO, THRA | 6 | 10 | 1997 | 1310 | 65 | | 1000 | Y | Sage Creek, Downstream from Dovetail Road | |
| MT950378 | Petroleum | 019N028E | 1 | SE | PSTR | 7 | 13 | 1995 | 2020 | 7 | | 4000 | Y | Pond 4 | |
| MT950394 | Petroleum | 019N028E | 13 | SENE | AMTI, PSTR | 7 | 14 | 1995 | 700 | 10 | | 4000 | Y | Pond 10 | |
| MT950376 | Petroleum | 019N028E | 14 | SWNW | PSTR | 7 | 13 | 1995 | 1500 | 5 | | 0 | Y | Pond 6 | |
| MT950374 | Petroleum | 019N028E | 24 | SENW | PSTR | 7 | 13 | 1995 | 1725 | 15 | | 8000 | Y | Pond 8 | |
| MT950372 | Petroleum | 019N028E | 25 | NWNW | PSTR | 7 | 13 | 1995 | 1800 | 16 | | 4000 | Y | Pond 9 | |
| MT960403 | Petroleum | 019N028E | 27 | NWNW | CHPI, THRA | 6 | 17 | 1996 | 1120 | 40 | 2655 | 13000 | Y | Pond just below Drag Reservoir | |
| MT960068 | Phillips | 021N024E | 1 | NW | BUWO, CHPI, PSTR | 6 | 13 | 1996 | 1210 | 40 | 2283 | 12600 | Y | CMR NWR, ponds by Jct Rds 101 & 201 | |

*Species abbreviations: Ambystoma macrodactylum AMMA; Ambystoma tigrinum AMTI; Bufo boreas BUBO; Bufo cognatus BUCO, Bufo woodhousii BUWO; Chrysemys picta CHPI; Coluber constrictor COCO; Pseudacris triseriata PSTR; Rana luteiventris RALU (= Rana pretiosa RAPR); Rana pipiens RAPI; Spea bombifrons SPBO; Thamnophis elegans THEL; Thamnophis radix THRA; Thamnophis sirtalis THIS.

Appendix 1. Survey sites within the BLM Lewistown district with location and species information.

| SURV | COUNTY | TR | S | Q | SPEC* | MO | DA | YEAR | START | MIN | ELEV | SQ m | Y/N | SITE: | NOTE: |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| MT960069 | Phillips | 021N025E | 2 | NW | PSTR, RAPI | 6 | 13 | 1996 | 1415 | 60 | 2296 | 5600 | Y | CMR NWR, Rock Ck Res. | |
| MT960072 | Phillips | 022N029E | 33 | SW | PSTR, THRA | 6 | 19 | 1996 | 1405 | 40 | 2461 | 25000 | Y | UL Bend NWR, Res. off Rd 212 ca. 1 mi N of Jct w/Rd 201 | |
| MT960071 | Phillips | 022N030E | 23 | NW | CHPI, PSTR, THRA | 6 | 19 | 1996 | 1030 | 60 | 2392 | 16200 | Y | UL Bend NWR, Res. near Valentine Ck off Rd 201 | Reservoir is not on map. |
| MT960067 | Phillips | 022N032E | 18 | NW | PSTR | 6 | 18 | 1996 | 1630 | 30 | 2297 | 5100 | Y | CMR NWR, Fourchette Bay | |
| MT970108 | Phillips | 023N023E | 26 | NENE | PSTR, RAPI, THRA | 6 | 22 | 1997 | 855 | 75 | 2990 | 24000 | Y | Pond N of Bell Ridge Recreation Site | |
| MT970109 | Phillips | 023N024E | 7 | SWSE | PSTR, RAPI, THRA | 6 | 22 | 1997 | 1035 | 25 | 3000 | 6400 | Y | Pond off Siparyann Creek at Hwy 191 | |
| MT980053 | Phillips | 023N024E | 8 | SW | PSTR, RAPI | 5 | 24 | 1998 | 1630 | 60 | 3083 | 33600 | Y | Siparyann Creek along Hwy 191, 2 mi S of jct with Hwy 66 | F0967;S0967 |
| MT980052 | Phillips | 023N024E | 20 | NW | THRA | 5 | 24 | 1998 | 1350 | 70 | 2959 | 7750 | Y | Sec 20 Reservoir, 0.5 mi N of Bell Ridge, 2 mi E of Hwy 191 | F0966;S0966 |
| MT960070 | Phillips | 023N025E | 26 | NWSW | PSTR | 6 | 13 | 1996 | 1630 | 40 | 2953 | 24000 | Y | N of CMR NWR, Deep Res. 1 mi E of Gullwing Res. | |
| MT970082 | Phillips | 024N024E | 12 | SESW | RAPI | 10 | 8 | 1997 | 1510 | 20 | 3400 | 300 | Y | The Plunge (Warm Springs) on Warm Springs Creek | |
| MT950507 | Phillips | 024N026E | 7 | NESE | CHPI, PSTR | 7 | 19 | 1995 | 1417 | 23 | 3340 | | Y | Pond 3 miles ENE of Robinson School | |
| MT960031 | Phillips | 025N025E | 21 | SW | AMTI | 7 | 8 | 1996 | 720 | 15 | 3800 | 450 | Y | Stock pond abv Ruby Creek ca. 1.5 mi SE of Zortman | |
| MT950509 | Phillips | 025N025E | 34 | SW | AMTI, THRA | 7 | 19 | 1995 | 1340 | 10 | 3560 | | Y | Pond E of Ruby Creek, SSE of Zortman | |
| MT950421 | Phillips | 025N033E | 1 | SWSW | PSTR, RAPI | 7 | 16 | 1995 | 951 | 7 | | 4000 | Y | Pond 12 | |
| MT950416 | Phillips | 025N033E | 2 | SENE | CHPI | 7 | 16 | 1995 | 930 | 7 | | 4000 | Y | Pond 11 | |
| MT950419 | Phillips | 025N033E | 3 | NENW | PSTR | 7 | 16 | 1995 | 1630 | 10 | 2610 | 4000 | Y | Pond 10 | |
| MT950431 | Phillips | 025N033E | 10 | SW | PSTR | 7 | 16 | 1995 | 1440 | 13 | | 4000 | Y | Pond 13 | |
| MT950434 | Phillips | 025N033E | 15 | NWSW | PSTR | 7 | 16 | 1995 | 1224 | 7 | 2600 | 4000 | Y | Pond 17 | |
| MT950436 | Phillips | 025N033E | 15 | SWNE | THRA | 7 | 16 | 1995 | 1155 | 10 | 2640 | 4000 | Y | Pond 18 | |
| MT950432 | Phillips | 025N033E | 16 | SWSW | PSTR | 7 | 16 | 1995 | 1305 | 10 | 2740 | 4000 | Y | Pond 16 | |
| MT950405 | Phillips | 025N033E | 23 | NENE | PSTR | 7 | 15 | 1995 | 1800 | 11 | | 4000 | Y | Pond 19 | |
| MT950459 | Phillips | 026N033E | 24 | SENW | THRA | 7 | 17 | 1995 | 1000 | 30 | 2570 | 4000 | Y | Pond 3 | |
| MT950461 | Phillips | 026N033E | 25 | NWNW | CHPI | 7 | 17 | 1995 | 1055 | 25 | 2600 | 12000 | Y | Pond 4 | |
| MT950425 | Phillips | 026N033E | 27 | NWSE | PSTR | 7 | 16 | 1995 | 1755 | 15 | 2620 | 4000 | Y | Pond 2 | |
| MT950423 | Phillips | 026N033E | 28 | NE | PSTR | 7 | 16 | 1995 | 1825 | 26 | 2560 | 60000 | Y | Pond 1 | |
| MT960429 | Phillips | 026N033E | 30 | /29 | CHPI, PSTR | 6 | 20 | 1996 | 1920 | 40 | 2515 | 269603 | Y | Lake PR-19 | |

*Species abbreviations: Ambystoma macrodactylum AMMA; Ambystoma tigrinum AMTI; Bufo boreas BUBO; Bufo cognatus BUCO, Bufo woodhousii BUWO; Chrysemys picta CHPI; Coluber constrictor COCO; Pseudacris triseriata PSTR; Rana luteiventris RALU (= Rana pretiosa RAPR); Rana pipiens RAPI; Spea bombifrons SPBO; Thamnophis elegans THEL; Thamnophis radix THRA; Thamnophis sirtalis THIS.

Appendix 1. Survey sites within the BLM Lewistown district with location and species information.

| SURV | COUNTY | TR | S | Q | SPEC* | MO | DA | YEAR | START | MIN | ELEV | SQ m | Y/N | SITE: | NOTE: |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| MT950413 | Phillips | 026N033E | 34 | SWSE | PSTR | 7 | 16 | 1995 | 1650 | 5 | 2610 | 4000 | Y | Pond 10 A | |
| MT950426 | Phillips | 026N033E | 35 | C | PSTR | 7 | 16 | 1995 | 830 | 12 | | 4000 | Y | Pond 8 | |
| MT960217 | Phillips | 027N027E | 1 | | RAPI | 7 | 24 | 1996 | 1020 | 20 | | 896924 | Y | Lower Wild Horse Reservoir | Also T27N R28E section 6. |
| MT960215 | Phillips | 027N027E | 2 | NW | RAPI, THRA | 7 | 24 | 1996 | 920 | 45 | | 876915 | Y | Wild Horse Reservoir | Also 1, 35 and 36. |
| MT950510 | Phillips | 027N030E | 20 | SE | PSTR, THRA | 7 | 19 | 1995 | 1055 | 25 | | | Y | Ponds in Button Butte Coulee above Nelson Reservoir | |
| MT960433 | Phillips | 027N032E | 30 | NW | PSTR | 6 | 20 | 1996 | 1635 | 55 | 2455 | 175460 | Y | Unnamed pond 1.4 mi S, 1.2 mi W of Black Cow Reservoir | |
| MT960396 | Phillips | 028N027E | 9 | WMID | PSTR | 6 | 5 | 1996 | 900 | 90 | 2610 | 159864 | Y | Pond N of Tressler Coulee | |
| MT960430 | Phillips | 028N030E | 1 | N2 | PSTR | 6 | 20 | 1996 | 1200 | 60 | | 289268 | Y | Bennett Lake | |
| MT960385 | Phillips | 029N027E | 31 | SW | PSTR | 6 | 4 | 1996 | 1755 | 15 | 2590 | | Y | Korsbeck WPA, Pond 2 | |
| MT960387 | Phillips | 029N027E | 31 | MIDE | AMTI, PSTR | 6 | 4 | 1996 | 1655 | 45 | 2770 | | Y | Pond 1, Korsbeck WPA | |
| MT960386 | Phillips | 029N027E | 32 | SENW | PSTR | 6 | 4 | 1996 | 1515 | 15 | 2580 | | Y | Korsbeck WPA east pond | |
| MT960391 | Phillips | 029N027E | 33 | SW | PSTR | 6 | 4 | 1996 | 1545 | 50 | 2570 | 839142 | Y | Lake S of Shaver Ranch | |
| MT960399 | Phillips | 029N028E | 13 | NW | PSTR | 6 | 5 | 1996 | 1600 | 30 | 2495 | 37662 | Y | Temporary pond N of Halfway Coulee. | |
| MT960075 | Phillips | 030N031E | 15 | NW | PSTR | 6 | 20 | 1996 | 1435 | 35 | 2220 | 240000 | Y | Bowdoin NWR - Goose Island Pond | |
| MT960389 | Phillips | 031N026E | 26 | | PSTR, RAPI | 6 | 4 | 1996 | 1045 | 110 | 2290 | 156148 | Y | Dodson Reservoir | |
| MT980046 | Phillips | 031N030E | 8 | SW | RAPI | 5 | 22 | 1998 | 1205 | 75 | 2335 | 4200 | Y | Assinibone Creek, 6 mi NW of Malta, 2 mi W of Hwy 242 | F0960;S0960 |
| MT960073 | Phillips | 031N031E | 23 | SE | CHPI | 6 | 20 | 1996 | 1215 | 45 | 2224 | 1800 | Y | Bowdoin NWR, S end of Lake-side Unit near Dry Lake Canal | |
| MT980030 | Phillips | 031N034E | 19 | SE | CHPI, PSTR, RAPI | 5 | 15 | 1998 | 1310 | 150 | 2276 | 87500 | Y | First Creek and adjoining Reservoir, 2.5 mi S of Saco | F0944;S0944 |
| MT980047 | Phillips | 032N029E | 17 | NW | CHPI, THRA | 5 | 22 | 1998 | 1500 | 75 | 2722 | 48600 | Y | Sec 17 Reservoir, 12 mi NW of Malta, 9 mi W of Hwy 242 | F0961;S0961 |
| MT961027 | Phillips | 032N032E | 15 | NENW | CHPI, RAPI | 7 | 25 | 1996 | 1410 | 30 | 2185 | 96087 | Y | McNeil Slough WPA | |
| MT980048 | Phillips | 035N033E | 15 | SE | CHPI, THRA | 5 | 23 | 1998 | 1205 | 65 | 2804 | 24200 | Y | Sec 15 Reservoir, 1 mi W of Turkey Rd, 24 mi N of Saco | F0962;S0962 |
| MT980051 | Phillips | 035N035E | 31 | NW | CHPI, COCO | 5 | 23 | 1998 | 1745 | 70 | 2280 | 8000 | Y | Frenchman Creek, 3 mi N of Frenchman Reservoir | F0965;S0965 |
| MT980049 | Phillips | 035N035E | 33 | SW | PSTR | 5 | 23 | 1998 | 1445 | 60 | 2532 | 46000 | Y | Sec 33 Reservoir, 0.5 mi N of Genevieve, 24 mi N of Hinsdale | F0963;S0963 |
| MT980050 | Phillips | 035N036E | 26 | NE | CHPI | 5 | 23 | 1998 | 1600 | 60 | 2526 | 5475 | Y | Snake Creek, 3 mi NE of Genevieve, 26 mi N of Hinsdale | F0964;S0964 |
| MT960248 | Phillips | 036N027E | 25 | | PSTR, THRA | 7 | 10 | 1996 | 1540 | 20 | | 252191 | Y | Chapman Reservoir, in Woody Island Coulee | Also in T36N R27E 36 and T36N R28E 30, PSTR |

*Species abbreviations: Ambystoma macrodactylum AMMA; Ambystoma tigrinum AMTI; Bufo boreas BUBO; Bufo cognatus BUCO, Bufo woodhousii BUWO; Chrysemys picta CHPI; Coluber constrictor COCO; Pseudacris triseriata PSTR; Rana luteiventris RALU (= Rana pretiosa RAPR); Rana pipiens RAPI; Spea bombifrons SPBO; Thamnophis elegans THEL; Thamnophis radix THRA; Thamnophis sirtalis THIS.

Appendix 1. Survey sites within the BLM Lewistown district with location and species information.

| SURV | COUNTY | TR | S | Q | SPEC* | MO | DA | YEAR | START | MIN | ELEV | SQ m | Y/N | SITE: | NOTE: |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | | | | | | | | | specimen collected (MTHP 4057.) |
| MT960033 | Phillips | 036N029E | 5 | SE | PSTR | 7 | 11 | 1996 | 2006 | 30 | 2850 | | Y | Dyrdahl WPA | Collected 3 specimens (MTHP 4058) |
| MT960211 | Phillips | 036N031E | 35 | NE | AMTI, PSTR | 7 | 12 | 1996 | 1145 | 60 | | 2693013 | Y | Whitewater Lake | |
| MT960213 | Phillips | 037N031E | 35 | NW | THRA | 7 | 24 | 1996 | 1635 | 55 | | 2000000 | Y | Pea Lake | Also 2, SE4 27 and NE4 34. |
| MT950565 | Pondera | | 0 | | AMMA, RALU | 7 | 31 | 1995 | 1300 | 90 | 5720 | | Y | Headwaters of S Fk Two Medicine River beaver complex | |
| MT961357 | Pondera | 028N009W | 20 | NWNE | PSTR | 5 | 31 | 1996 | 1620 | 25 | 4680 | | Y | Unnamed Lake, 0.5 mi ENE of NW Howe Lake at Jarina WPA | |
| MT950107 | Pondera | 029N001W | 17 | SESW | PSTR | 5 | 6 | 1995 | 2015 | 30 | 3412 | | Y | Ca. 3 mi E of Ledger on County Rd 336 | LAT 481553N LONG 1114554W |
| MT970115 | Powell | 014N011W | 16 | SW | RALU | 7 | 22 | 1997 | 1510 | 80 | 4298 | 21000 | Y | Brown's Lake inlet | Along stream from road to lake. |
| MT970005 | Teton | 022N001W | 3 | NW | RAPI | 5 | 20 | 1997 | 1300 | 45 | | 5000 | Y | Sand Ck trib., pond | |
| MT970003 | Teton | 022N001W | 24 | S2SW | PSTR, RAPI | 5 | 20 | 1997 | 1430 | 40 | | 5000 | Y | Gordon, 1.8 mi W, 0.7 mi N of | MTHP - 2180 |
| MT961007 | Teton | 022N007W | 3 | SWNE | THEL | 7 | 22 | 1996 | 1145 | 50 | 4396 | 9600 | Y | Pond off northwest side Pishkin Reservoir | |
| MT960065 | Teton | 025N009W | 8 | SW | BUBO | 6 | 11 | 1996 | 1715 | 30 | 6397 | 600 | Y | Teton Pass Ski Area - water source pond | |
| MT980151 | Teton | 025N009W | 26 | SW | BUBO | 5 | 27 | 1998 | 1300 | 180 | 5120 | 10000 | Y | Cave Mtn, Middle Fork Teton, Teton NF next to cmpgrnd | |
| MT960064 | Teton | 026N006W | 29 | NW | | 6 | 11 | 1996 | 1430 | 40 | 4143 | 8000 | Y | Blackleaf Canyon Rd, jct of Muddy Ck & Bynum Canal | |
| MT961351 | Teton | 026N008W | 14 | SWSE | PSTR | 5 | 29 | 1996 | 1600 | 25 | 4660 | | Y | Ponds on E edge of Blackleaf Game Range | |
| MT961346 | Teton | 026N008W | 18 | NESE | AMTI, PSTR | 5 | 26 | 1996 | 1750 | 30 | 5174 | | Y | Blackleaf Game Range pond | |
| MT961350 | Teton | 026N008W | 28 | N | PSTR | 5 | 29 | 1996 | 1210 | 20 | 4950 | | Y | Blackleaf Swamp | |
| MT961358 | Teton | 027N009W | 23 | NNW | PSTR, RALU | 5 | 31 | 1996 | 1420 | 15 | 5060 | | Y | N Fork Dupuyer Pond, upland | |
| MT961354 | Teton | 027N009W | 35 | NWSE | AMTI, PSTR, RALU, THSI | 5 | 30 | 1996 | 1425 | 95 | 5480 | | Y | Ephemeral pond | |
| MT950115 | Toole | 031N001W | 22 | SWSW | PSTR | 5 | 16 | 1995 | 1900 | 45 | 3379 | | Y | Small reservoir 4 mi S of Hwy 2 and 1 mi E of Cnty Rd 417 | |
| MT960361 | Toole | 033N003W | 26 | NE | PSTR | 6 | 1 | 1996 | 1110 | 40 | 3270 | 40000 | Y | Temporary pond, 5 mi N, 4 mi E of Shelby. | 3 adults, calling. |
| MT960370 | Toole | 035N002W | 7 | SE | PSTR | 6 | 1 | 1996 | 1545 | 20 | 3310 | 372565 | Y | Temporary pond 2.5 mi E, and 3.4 mi N of Kevin. | 8 adults calling. |
| MT960244 | Toole | 035N002W | 20 | SW | PSTR | 6 | 1 | 1996 | 1400 | 45 | | 26000 | Y | Ca. 2.5 mi NW of Oilmont | |

*Species abbreviations: Ambystoma macrodactylum AMMA; Ambystoma tigrinum AMTI; Bufo boreas BUBO; Bufo cognatus BUCO, Bufo woodhousii BUWO; Chrysemys picta CHPI; Coluber constrictor COCO; Pseudacris triseriata PSTR; Rana luteiventris RALU (= Rana pretiosa RAPR); Rana pipiens RAPI; Spea bombifrons SPBO; Thamnophis elegans THEL; Thamnophis radix THRA; Thamnophis sirtalis THIS.

Appendix 1. Survey sites within the BLM Lewistown district with location and species information.

| SURV | COUNTY | TR | S | Q | SPEC* | MO | DA | YEAR | START | MIN | ELEV | SQ m | Y/N | SITE: | NOTE: |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| MT961359 | Toole | 035N002W | 20 | CENT | PSTR | 6 | 1 | 1996 | 1400 | 45 | 3340 | 87500 | Y | Temporary pond 3 mi E and 2.4 mi N of Kevin | |
| MT960233 | Toole | 035N002W | 31 | SW | PSTR | 6 | 1 | 1996 | 2045 | 5 | | 93615 | Y | Ca. 2.5 mi East of Oilmont | 3+; calling. |
| MT960242 | Toole | 035N003W | 25 | NW | PSTR | 6 | 1 | 1996 | 1530 | 25 | | 240000 | Y | Ca. 1.5 mi NE of Kevin | |
| MT950116 | Toole | 036N003W | 24 | SWNE | PSTR | 5 | 17 | 1995 | 1145 | 75 | 4150 | | Y | Sweetgrass Hills. Pond on E side of Whitlash Rd. b/w Gold and East Buttes. | LAT 485128N LONG 1111702W |
| MT960030 | Toole | 037N002W | 34 | NE | PSTR | 6 | 1 | 1996 | 1915 | 40 | | 60000 | Y | "Brown WPA" ca. 4 mi NE of Sunburst | |
| MT961013 | Valley | 024N036E | 10 | SW | AMTI | 7 | 23 | 1996 | 1430 | 40 | 2474 | 141071 | Y | Desert Coulee Reservoir | |
| MT961005 | Valley | 024N037E | 12 | SE | AMTI, THRA | 7 | 23 | 1996 | 1240 | 65 | 2430 | 130244 | Y | Two Forks Reservoir | |
| MT950400 | Valley | 025N034E | 20 | | PSTR | 7 | 15 | 1995 | 1940 | 5 | | 4000 | Y | Alternate Pond 2 for White Horse Coulee Quad | |
| MT980033 | Valley | 025N038E | 15 | NW | RAPI, THRA | 5 | 16 | 1998 | 1610 | 50 | 2230 | 2750 | Y | Hay Coulee Res'voir on Willow Cr. Rd., 16 mi W of Hwy 24 | F0947;S0947 |
| MT980034 | Valley | 025N039E | 18 | SE | CHPI, PSTR | 5 | 16 | 1998 | 1730 | 60 | 2444 | 7150 | Y | Reservoir on S Fk. of Duck Ck., 16 mi W of Hwy 24, 8 mi N of the Pines | F0948;S0948 |
| MT950456 | Valley | 026N034E | 19 | SWSE | PSTR | 7 | 17 | 1995 | 931 | 5 | 2500 | 4000 | Y | Pond 5 | |
| MT950451 | Valley | 026N034E | 30 | NWSW | AMTI, PSTR | 7 | 17 | 1995 | 1920 | 16 | 2480 | 4000 | Y | Pond 7 | |
| MT950476 | Valley | 026N037E | 17 | SW | PSTR | 7 | 17 | 1995 | 1410 | 22 | | | Y | Itcaina Reservoir, near Beaver and Triple crossing road intersection | |
| MT980031 | Valley | 026N039E | 3 | SE | THRA | 5 | 16 | 1998 | 1110 | 50 | 2132 | 28000 | Y | Mud Creek Reservoir, 6 mi W of Hwy 24, 11 mi S of Glasgow | F0945;S0945 |
| MT950455 | Valley | 027N037E | 0 | | PSTR | 7 | 17 | 1995 | | | | 4000 | Y | Alternate Pond 2 just NW of Alternate Pond 1 | |
| MT950453 | Valley | 027N037E | 24 | | PSTR | 7 | 17 | 1995 | 1630 | 20 | | 80000 | Y | Alternate 1 Pond (Dammed main rd over Miller Coulee) | |
| MT950470 | Valley | 027N038E | 21 | SWNE | PSTR | 7 | 17 | 1995 | 1730 | 15 | 2258 | 32000 | Y | Judy Reservoir | |
| MT950489 | Valley | 027N038E | 24 | CENT | RAPI,THRA | 7 | 18 | 1995 | 1005 | 35 | 2247 | 60000 | Y | January Reservoir | |
| MT980039 | Valley | 028N037E | 19 | NE | CHPI, COCO, RAPI, THRA | 5 | 18 | 1998 | 1730 | 80 | 2263 | 37800 | Y | Brazil Creek 15 mi W of Glasgow | F0953;S0953 |
| MT980036 | Valley | 028N038E | 10 | SE | CHPI | 5 | 18 | 1998 | 1205 | 65 | 2230 | 29150 | Y | Sec 10 Reservoir, 7 mi W of Glasgow | F0950;S0950 |
| MT980037 | Valley | 028N038E | 20 | NE | CHPI, PSTR, RAPI | 5 | 18 | 1998 | 1400 | 70 | 2181 | 7650 | Y | Brazil Creek, 8 mi W of Glasgow | F0951;S0951 |

*Species abbreviations: Ambystoma macrodactylum AMMA; Ambystoma tigrinum AMTI; Bufo boreas BUBO; Bufo cognatus BUCO, Bufo woodhousii BUWO; Chrysemys picta CHPI; Coluber constrictor COCO; Pseudacris triseriata PSTR; Rana luteiventris RALU (= Rana pretiosa RAPR); Rana pipiens RAPI; Spea bombifrons SPBO; Thamnophis elegans THEL; Thamnophis radix THRA; Thamnophis sirtalis THIS.

Appendix 1. Survey sites within the BLM Lewistown district with location and species information.

| SURV | COUNTY | TR | S | Q | SPEC* | MO | DA | YEAR | START | MIN | ELEV | SQ m | Y/N | SITE: | NOTE: |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| MT950482 | Valley | 028N039E | 11 | | PSTR | 7 | 18 | 1995 | 1305 | 15 | | | Y | Glasgow; pond on W side of Cherry Creek | |
| MT950318 | Valley | 033N035E | 1 | SWNE | PSTR | 7 | 2 | 1995 | 1440 | 5 | 2740 | 8000 | Y | Pond 29A | |
| MT950344 | Valley | 033N035E | 11 | SESE | PSTR | 7 | 3 | 1995 | 907 | 5 | 2630 | 4000 | Y | Pond 30 | |
| MT950322 | Valley | 033N035E | 12 | N | CHPI, PSTR, RAPI, THRA | 7 | 2 | 1995 | 1332 | 48 | 2660 | 80000 | Y | Pond 29 | |
| MT950327 | Valley | 033N036E | 5 | SENE | SPBO | 7 | 2 | 1995 | 1655 | 10 | 2350 | 4000 | Y | Pond 27 | |
| MT950330 | Valley | 033N036E | 5 | NESW | PSTR | 7 | 2 | 1995 | 1802 | 8 | 2600 | 4000 | Y | Pond 25 | |
| MT950315 | Valley | 033N036E | 6 | SWNW | RAPI | 7 | 2 | 1995 | 1518 | 9 | 2620 | 16000 | Y | Pond 22 | |
| MT950336 | Valley | 033N036E | 6 | NENW | RAPI | 7 | 2 | 1995 | 1542 | 8 | 2610 | 8000 | Y | Pond 23 | |
| MT950326 | Valley | 033N036E | 7 | M | PSTR | 7 | 2 | 1995 | 1830 | 10 | 2660 | 4000 | Y | Pond 24 | |
| MT950350 | Valley | 034N036E | 7 | | RAPI | 7 | 3 | 1995 | 1220 | 30 | 2340 | | Y | Ponds 6-10 (pools in Rock Creek) | |
| MT950491 | Valley | 034N036E | 21 | NWSE | PSTR | 7 | 18 | 1995 | 1400 | 15 | 2700 | 4000 | Y | Pond 14 | |
| MT961003 | Valley | 034N039E | 28 | SW | CHPI, RAPI | 7 | 24 | 1996 | 1710 | 50 | 2925 | 126283 | Y | Ward Reservoir | Larger than shown on map - dam redone in 1994. |
| MT980085 | Valley | 036N007W | 29 | NW | RAPI | 5 | 3 | 1998 | 1410 | 50 | 2444 | 6200 | Y | Rock Creek, 2 mi S of Thoeny, 30 mi W of Opheim | F0932;S0932 |
| MT980087 | Valley | 036N008W | 25 | NW | CHPI, PSTR | 5 | 3 | 1998 | 1730 | 85 | 2444 | 37500 | Y | Bluff Creek, 2 mi SW Thoeny, 30 mi W of Opheim | F0934;S0934 |
| MT980086 | Valley | 036N008W | 26 | SW | PSTR, RAPI, THRA | 5 | 3 | 1998 | 1650 | 20 | 2552 | 2880000 | Y | Lake Grable, 4 mi SW of Thoeny, 32 mi W of Opheim | F0933;S0933 |
| MT980058 | Blaine | 025N020E | 6 | NW | | 5 | 25 | 1998 | 1705 | 40 | 3411 | 11000 | N | Bud Reservoir, 11 mi N of Missouri River | F0972;S0972 |
| MT980055 | Blaine | 025N021E | 5 | NW | | 5 | 25 | 1998 | 1310 | 50 | 2854 | 10450 | N | Sec 5 Reservoir by Cow Creek crossing, 11 mi N of Missouri R | F0969;S0969 |
| MT970107 | Blaine | 026N022E | 30 | NESE | | 6 | 21 | 1997 | 1820 | 15 | 3325 | 1200 | N | Upper Little Suction Creek pond | |
| MT950250 | Blaine | 033N019E | 26 | NW | | 6 | 30 | 1995 | 1845 | 15 | 2400 | | N | Lodge Creek at Hwy 2 near Chinook | |
| MT950256 | Blaine | 033N020E | 2 | SWSE | | 7 | 1 | 1995 | 850 | 10 | 2640 | 4000 | N | Pond 26 | |
| MT950267 | Blaine | 033N021E | 7 | S2 | | 7 | 1 | 1995 | 720 | 10 | 2600 | 12000 | N | Ponds 29 & 30 | |
| MT960252 | Blaine | 033N025E | 23 | E2 | | 7 | 11 | 1996 | 1430 | 10 | | 202307 | N | Pothole, ca. 12 mi NE of Savoy | |
| MT950299 | Blaine | 033N030E | 1 | NESW | | 7 | 1 | 1995 | 915 | 5 | 2630 | 4000 | N | Pond 34 | |
| MT960250 | Blaine | 034N020E | 5 | SW | | 7 | 11 | 1996 | 910 | 30 | | 60000 | N | Unnamed Pothole, 3 mi E and 9.5 mi N of Chinook | |
| MT950276 | Blaine | 034N020E | 12 | SWSE | | 7 | 1 | 1995 | 2015 | 5 | 2740 | 4000 | N | Pond 18 | |
| MT960207 | Blaine | 034N020E | 24 | SE | | 7 | 11 | 1996 | 1100 | 25 | | 495568 | N | Tule Lake | |

*Species abbreviations: Ambystoma macrodactylum AMMA; Ambystoma tigrinum AMTI; Bufo boreas BUBO; Bufo cognatus BUCO, Bufo woodhousii BUWO; Chrysemys picta CHPI; Coluber constrictor COCO; Pseudacris triseriata PSTR; Rana luteiventris RALU (= Rana pretiosa RAPR); Rana pipiens RAPI; Spea bombifrons SPBO; Thamnophis elegans THEL; Thamnophis radix THRA; Thamnophis sirtalis THIS.

Appendix 1. Survey sites within the BLM Lewistown district with location and species information.

| SURV | COUNTY | TR | S | Q | SPEC* | MO | DA | YEAR | START | MIN | ELEV | SQ m | Y/N | SITE: | NOTE: |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| MT960209 | Blaine | 034N021E | 18 | SW | | 7 | 11 | 1996 | 1150 | 35 | | 276937 | N | Unnamed Reservoir on Fifteenmile Creek | Also NW4 18. |
| MT960392 | Blaine | 035N017E | 10 | SE | | 6 | 4 | 1996 | | | | | | Ca. 20 mi NE of Havre | 100 adults calling. |
| MT970094 | Blaine | 036N018E | 16 | NW | | 6 | 20 | 1997 | 1850 | 10 | 2580 | 480 | N | Battle Creek at road crossing | |
| MT970090 | Blaine | 036N019E | 17 | NW | | 6 | 21 | 1997 | 1120 | 10 | | 400 | N | Creek crossing ca 1 mi N of confluence with E Fork Battle Creek | Baird's sparrow also observed. |
| MT970088 | Blaine | 037N019E | 1 | SW | | 6 | 21 | 1997 | 1400 | 40 | 2790 | 30000 | N | Reservoir (unnamed) ca 2 mi W of Sand Coulee | Baird's sparrow also observed. |
| MT970089 | Blaine | 037N019E | 34 | SW | | 6 | 21 | 1997 | 1220 | 15 | 2650 | 400 | N | E Fork Battle Creek | |
| MT970087 | Blaine | 037N020E | 8 | SW | | 6 | 21 | 1997 | 1545 | 10 | 2750 | 480 | N | Sand Coulee at road crossing | |
| MT970086 | Blaine | 037N020E | 11 | NW | | 6 | 21 | 1997 | 1630 | 20 | 2825 | 30000 | N | Reservoir (unnamed), ca 3 mi ENE of Sand Coulee | Baird's Sparrow also observed. |
| MT960246 | Blaine | 037N023E | 13 | SE | | 7 | 10 | 1996 | 1315 | 20 | | 1115072 | N | Akali Lake | Water a milky color. |
| MT950228 | Cascade | | 0 | | | 6 | 22 | 1995 | 1440 | 25 | 7000 | | N | Headwaters of Tillinghust Creek | UTM: 5198530N 512670E |
| MT960378 | Choteau | 021N011E | 7 | NESE | | 6 | 3 | 1996 | 1300 | 10 | 3270 | | N | Pond N of Kingsbury Lake, Kingsbury WPA | |
| MT960380 | Choteau | 021N011E | 7 | SESE | | 6 | 3 | 1996 | 1530 | 10 | | | N | Lower pond N of Kingsbury Lake, Kingsbury WPA | |
| MT960373 | Choteau | 025N009E | 3 | | | 6 | 2 | 1996 | 1800 | 5 | | 0 | N | Old oxbow 0.5 mi N, 2.5 mi E of Loma... | Dry. |
| MT950383 | Fergus | 019N021E | 0 | | | 7 | 14 | 1995 | 1609 | | | 4000 | N | Pond 10 | |
| MT950391 | Fergus | 019N021E | 0 | | | 7 | 14 | 1995 | 1245 | | | 12000 | N | Pond 5 | |
| MT950390 | Fergus | 019N021E | 14 | SE | | 7 | 14 | 1995 | 1221 | | | 4000 | N | Pond 6 | |
| MT950387 | Fergus | 019N021E | 22 | NESW | | 7 | 14 | 1995 | 1400 | 15 | | 4000 | N | Pond 8 | |
| MT960407 | Fergus | 020N026E | 17 | NE | | 6 | 18 | 1996 | 1600 | 60 | 2825 | 145201 | N | Unnamed reservoir 1.5 mi WNW of Holland Reservoir | |
| MT960079 | Fergus | 021N025E | 6 | SW | | 6 | 14 | 1996 | 1550 | 40 | 2461 | 1600 | N | | |
| MT950251 | Hill | 032N016E | 18 | SW | | 6 | 30 | 1995 | 1737 | 23 | 2660 | | N | Sando Lake, Havre | |
| MT950155 | Judith Basin | 011N010E | 27 | SE | | 6 | 1 | 1995 | 1230 | 10 | 6800 | | N | Fen just E of Willow Park | |
| MT950655 | Lewis & Clark | 015N006W | 27 | SW | | 8 | 31 | 1995 | 1115 | 5 | 5560 | | N | Mike Horse Reservoir | |
| MT950652 | Lewis & Clark | 016N007W | 34 | SE | | 8 | 31 | 1995 | 1240 | 25 | 5400 | | N | Alice Creek | |
| MT950137 | Lewis & Clark | 016N008W | 33 | | | 5 | 25 | 1995 | 1605 | 100 | 6000 | | N | Indian Meadows, also sections 34 and 28. | UTM 5218000N 378000E |
| MT980157 | Lewis & Clark | 020N010W | 8 | NE | | 6 | 11 | 1998 | 1145 | 25 | 5200 | 50000 | N | SW of trail #230, 600 m N of pack bridge | |
| MT980152 | Lewis & Clark | 022N009W | 35 | S2 | | 5 | 28 | 1998 | 1030 | 90 | | 30000 | N | Diversion Lake | Along S shoreline only |
| MT980159 | Meagher | 012N007E | 22 | NW | | 6 | 18 | 1998 | 1120 | 30 | 6040 | 400 | N | Beaver pond on Daniels Cr | |
| MT970026 | Petroleum | 013N026E | 5 | SE | | 6 | 8 | 1997 | 1510 | | | | N | pond E of Wharehouse NWR | |

*Species abbreviations: Ambystoma macrodactylum AMMA; Ambystoma tigrinum AMTI; Bufo boreas BUBO; Bufo cognatus BUCO, Bufo woodhousii BUWO; Chrysemys picta CHPI; Coluber constrictor COCO; Pseudacris triseriata PSTR; Rana luteiventris RALU (= Rana pretiosa RAPR); Rana pipiens RAPI; Spea bombifrons SPBO; Thamnophis elegans THEL; Thamnophis radix THRA; Thamnophis sirtalis THIS.

Appendix 1. Survey sites within the BLM Lewistown district with location and species information.

| SURV | COUNTY | TR | S | Q | SPEC* | MO | DA | YEAR | START | MIN | ELEV | SQ m | Y/N | SITE: | NOTE: |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| MT970017 | Petroleum | 014N029E | 4 | NENW | | 6 | 11 | 1997 | 1310 | 30 | | | N | Pond 4 mi S, 2 mi W of Cat Creek | |
| MT970027 | Petroleum | 016N018E | 15 | NE | | 6 | 9 | 1997 | 1650 | 25 | | 200 | N | Upper Carter pond fishing access site | |
| MT960406 | Petroleum | 016N024E | 2 | CENT | | 6 | 18 | 1996 | 840 | 40 | 3170 | 214130 | N | Duck Creek Reservoir | |
| MT960409 | Petroleum | 016N025E | 3 | | | 6 | 18 | 1996 | 1310 | 140 | | 6458578 | N | Wild Horse Lake | |
| MT980026 | Petroleum | 016N025E | 28 | SW | | 5 | 27 | 1998 | 1800 | 40 | 3000 | | N | War Horse Lake, War Horse NWR | Also SE4. |
| MT960268 | Phillips | 023N030E | 22 | SW | | 7 | 23 | 1996 | 1020 | 20 | | 475630 | N | Indian Lake | |
| MT960270 | Phillips | 023N030E | 23 | NE | | 7 | 23 | 1996 | 1140 | 15 | | 169996 | N | Unnamed Lake, ca. 2 mi S of Indian Lake | |
| MT960266 | Phillips | 024N027E | 14 | NE | | 7 | 22 | 1996 | 1915 | 35 | | 211526 | N | Unnamed reservoir, 0.5 mi N of Dry Fork Creek | |
| MT950508 | Phillips | 025N025E | 16 | SWSW | | 7 | 19 | 1995 | 1310 | 25 | 4000 | | N | Ruby Creek, Zortman | |
| MT960260 | Phillips | 025N028E | 25 | SW | | 7 | 22 | 1996 | 1600 | 20 | | 178348 | N | Unnamed Lake | Thamnophis radix in dry rush area. |
| MT950411 | Phillips | 025N033E | 4 | NESE | | 7 | 16 | 1995 | 1535 | 16 | 2640 | 4000 | N | Pond 9 | |
| MT950410 | Phillips | 025N033E | 24 | SESE | | 7 | 15 | 1995 | 1719 | 6 | | 4000 | N | Pond 26 | |
| MT960277 | Phillips | 026N030E | 22 | E2 | | 7 | 23 | 1996 | 1610 | 40 | | 833753 | N | Whitcomb Lake | Also in SW section 23. |
| MT960279 | Phillips | 027N030E | 32 | NE | | 7 | 23 | 1996 | 1740 | 30 | | 589371 | N | Nelson Reservoir | Also in SE 29 and NW 33. |
| MT950503 | Phillips | 027N030E | 33 | | | 7 | 19 | 1995 | 1035 | 15 | | | N | Nelson Reservoir, ca. 19 mi S of Malta | |
| MT960426 | Phillips | 027N031E | 27 | /28 | | 6 | 20 | 1996 | 1420 | 25 | 2455 | 162105 | N | Unnamed pond W of Horse Pasture Coulee | |
| MT960384 | Phillips | 028N027E | 5 | NW | | 6 | 4 | 1996 | 1825 | 15 | | | N | Korsbeck WPA pond 3 | |
| MT960290 | Phillips | 028N028E | 22 | E2 | | 7 | 25 | 1996 | 1210 | 20 | | 341343 | N | Reservoir no. 161 | Access by road? |
| MT960288 | Phillips | 029N028E | 22 | SW | | 7 | 25 | 1996 | 1045 | 15 | | 147344 | N | reservoir | No location notation made. |
| MT960292 | Phillips | 029N028E | 23 | SE | | 7 | 25 | 1996 | 1130 | 15 | | 140497 | N | Unnamed reservoir | Also in NE 26 |
| MT950481 | Phillips | 030N030E | 18 | NE | | 7 | 18 | 1995 | 1746 | 20 | | | N | Malta; Milk River park in town | |
| MT960035 | Phillips | 030N031E | 5 | SWSE | | 7 | 25 | 1996 | 915 | 40 | 2220 | | N | Patrol Rd Pond, Bowdoin NWR | |
| MT961011 | Phillips | 031N031E | 13 | | | 7 | 25 | 1996 | 1100 | 60 | 2245 | 215498 | N | Mud Lake | |
| MT960074 | Phillips | 031N031E | 26 | NW | | 6 | 20 | 1996 | 1310 | 30 | 2220 | 60000 | N | Bowdoin NWR, S end of Lakeside Unit near Dry Lake Canal | |
| MT960036 | Phillips | 031N032E | 18 | SW | | 7 | 25 | 1996 | 1215 | 30 | 2228 | | N | Pearse WPA pond | Searched W side near handicap access site. |
| MT960254 | Phillips | 033N026E | 13 | SE | | 7 | 11 | 1996 | 1630 | 20 | | 282944 | N | Unnamed Reservoir on Down Reservoir Quad | 30 sweeps |
| MT960219 | Phillips | 034N017E | 4 | E2 | | 6 | 4 | 1996 | 1205 | 40 | | 1440000 | N | Martin Lake | Assumed 4E in meant "Section 4, East half". |
| MT960256 | Phillips | 035N029E | 14 | N2 | | 7 | 12 | 1996 | 935 | 45 | | 1020412 | N | Martin Lake, near Loring | Also in NE 15 |
| MT960283 | Phillips | 036N031E | 20 | SE | | 7 | 24 | 1996 | 1250 | 20 | | 186617 | N | Unnamed Lake, 2 mi NW of Whitewater Reservoir | |

*Species abbreviations: Ambystoma macrodactylum AMMA; Ambystoma tigrinum AMTI; Bufo boreas BUBO; Bufo cognatus BUCO, Bufo woodhousii BUWO; Chrysemys picta CHPI; Coluber constrictor COCO; Pseudacris triseriata PSTR; Rana luteiventris RALU (= Rana pretiosa RAPR); Rana pipiens RAPI; Spea bombifrons SPBO; Thamnophis elegans THEL; Thamnophis radix THRA; Thamnophis sirtalis THIS.

Appendix 1. Survey sites within the BLM Lewistown district with location and species information.

| SURV | COUNTY | TR | S | Q | SPEC* | MO | DA | YEAR | START | MIN | ELEV | SQ m | Y/N | SITE: | NOTE: |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| MT960032 | Phillips | 037N029E | 30 | NW | | 7 | 11 | 1996 | 1930 | 30 | 2800 | 200000 | N | Webb WPA | |
| MT960285 | Phillips | 037N032E | 29 | NW | | 7 | 24 | 1996 | 1545 | 10 | | 286230 | N | Unnamed reservoir, ca. 3 mi NE of Pea Lake | |
| MT960077 | Pondera | 028N009W | 17 | SE | | 6 | 11 | 1996 | 1210 | 50 | 4690 | 320000 | N | | |
| MT961356 | Pondera | 028N009W | 20 | SWNW | | 5 | 31 | 1996 | 1750 | 20 | 4730 | | N | Jarina WPA, NE Howe Lake | |
| MT960076 | Pondera | 028N010W | 24 | NW | | 6 | 11 | 1996 | 1030 | 60 | 4692 | 24000 | N | | |
| MT970012 | Teton | | | | | 5 | 20 | 1997 | 1545 | 40 | | 500 | N | Little Sandy R at confluence w Missouri R | |
| MT961043 | Teton | 022N007W | 17 | | | 7 | 22 | 1996 | 1255 | 40 | 4290 | 677392 | N | Split Rock Lake | |
| MT960037 | Teton | 025N005W | 6 | NW | | 7 | 22 | 1996 | 1630 | 40 | 3930 | | N | Foster Creek WPA | |
| MT961045 | Teton | 025N006W | 6 | | | 7 | 22 | 1996 | 1530 | 45 | 4180 | 12984998 | N | Bynum Reservoir | |
| MT960044 | Teton | 025N008W | 6 | | | 8 | 16 | 1996 | 1100 | 90 | | | N | Clark Fork Muddy Ck & 3 dry ponds | |
| MT960042 | Teton | 025N008W | 18 | | | 8 | 16 | 1996 | 940 | 80 | 6250 | 2000000 | N | Unnamed trib S of Clark Fork Muddy Ck | |
| MT960038 | Teton | 025N008W | 19 | | | 8 | 15 | 1996 | 1530 | 90 | 6000 | | N | Upper Pamburn Ck | |
| MT960040 | Teton | 025N009W | 1 | | | 8 | 15 | 1996 | 1230 | 30 | 6300 | 4000 | N | Upper Blindhorse Ck | |
| MT960066 | Teton | 025N009W | 23 | | | 6 | 11 | 1996 | 1830 | 75 | 5150 | 64000 | N | Teton R., W Fk, beaver ponds ca. 2 mi N of Cave Mtn Campground | |
| MT960043 | Teton | 025N009W | 25 | | | 8 | 16 | 1996 | 740 | 120 | 5100 | 1000000 | N | Clary Coulee | |
| MT961342 | Teton | 026N008W | 20 | NWSE | | 5 | 26 | 1996 | 1115 | 5 | 5000 | | N | Blackleaf Game Range | |
| MT960039 | Teton | 026N008W | 27 | SW | | 8 | 15 | 1996 | 1225 | 70 | 4801 | 210000 | N | Lake on Blackleaf WMA | |
| MT960041 | Teton | 026N008W | 33 | NE | | 8 | 15 | 1996 | 1335 | 85 | 4820 | | N | Blackleaf WMA, small ponds SSE of Antelope Butte | |
| MT961352 | Teton | 026N009W | 1 | NE | | 5 | 30 | 1996 | 1020 | 10 | 5110 | | N | Rocky Mountain Fromt pond above Cow Creek | |
| MT961353 | Teton | 026N009W | 1 | SE | | 5 | 30 | 1996 | 1100 | 70 | 5100 | | N | Beaver pond complex on Cow Creek, Rocky Mountain Front | |
| MT960015 | Teton | 026N009W | 13 | W | | 9 | 11 | 1996 | 1520 | 60 | 5600 | 2000 | N | E Fork Blackleaf Ck | |
| MT960016 | Teton | 026N009W | 13 | SENE | | 9 | 11 | 1996 | 1630 | 50 | 5300 | 200 | N | Beaver Ponds N of Blackleaf Ck | |
| MT961355 | Teton | 027N009W | 22 | SESE | | 5 | 31 | 1996 | 1310 | 10 | 5060 | | N | Backwater/spring on N. F. Dupuyer River | |
| MT960366 | Toole | 036N002W | 17 | | | 6 | 1 | 1996 | 1645 | 75 | 3315 | 801688 | N | Temporary lake SE of Sunburst | |
| MT960237 | Toole | 036N003W | 34 | NE | | 6 | 1 | 1996 | 1730 | 20 | | 320000 | N | Ca. 6 mi N of Kevin | |
| MT950408 | Valley | 025N034E | 0 | | | 7 | 15 | 1995 | 1915 | 5 | | 4000 | N | Alternate Pond for White Horse Coulee Pond | |
| MT950475 | Valley | 025N034E | 8 | NESW | | 7 | 17 | 1995 | 850 | | | 4000 | N | Pond 15 | |
| MT950402 | Valley | 025N034E | 20 | SENW | | 7 | 15 | 1995 | 1630 | 10 | | 4000 | N | Pond 27 | |
| MT950467 | Valley | 025N036E | 5 | | | 7 | 17 | 1995 | 1319 | 19 | | | N | Whitetail Reservoir | |

*Species abbreviations: Ambystoma macrodactylum AMMA; Ambystoma tigrinum AMTI; Bufo boreas BUBO; Bufo cognatus BUCO, Bufo woodhousii BUWO; Chrysemys picta CHPI; Coluber constrictor COCO; Pseudacris triseriata PSTR; Rana luteiventris RALU (= Rana pretiosa RAPR); Rana pipiens RAPI; Spea bombifrons SPBO; Thamnophis elegans THEL; Thamnophis radix THRA; Thamnophis sirtalis THIS.

Appendix 1. Survey sites within the BLM Lewistown district with location and species information.

| SURV | COUNTY | TR | S | Q | SPEC* | MO | DA | YEAR | START | MIN | ELEV | SQ m | Y/N | SITE: | NOTE: |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| MT961017 | Valley | 025N036E | 31 | SE | | 7 | 23 | 1996 | 1555 | 40 | 2490 | 137736 | N | Halfpint Reservoir | |
| MT980032 | Valley | 025N038E | 17 | NW | | 5 | 16 | 1998 | 1330 | 90 | 2214 | 20500 | N | Willow Creek, 1 mi N of Willow Cr. Rd., 18 mi W of Hwy 24 | F0946;S0946 |
| MT980038 | Valley | 027N036E | 9 | NE | | 5 | 18 | 1998 | 1600 | 50 | 2345 | 70000 | N | Hamm's Reservoir, 24 mi WSW of Glasgow | F0952;S0952 |
| MT961046 | Valley | 027N037E | 35 | | | 7 | 24 | 1996 | 940 | 60 | 2235 | 929041 | N | Grubb Reservoir | Several islands both with and without willow |
| MT950483 | Valley | 027N038E | 22 | SENE | | 7 | 18 | 1995 | 930 | 10 | 2254 | 52000 | N | Deep Cut Reservoir | |
| MT961009 | Valley | 028N036E | 23 | W2 | | 7 | 24 | 1996 | 1430 | 30 | 2339 | 746528 | N | VR-2 Reservoir | |
| MT950339 | Valley | 033N035E | 10 | NE | | 7 | 3 | 1995 | 830 | 5 | 2620 | 4000 | N | Pond 32 | |
| MT950486 | Valley | 034N036E | 21 | NWSW | | 7 | 18 | 1995 | 1430 | 10 | 2660 | 4000 | N | Pond 15 | |
| MT950346 | Valley | 034N036E | 26 | N | | 7 | 3 | 1995 | 944 | 10 | 2570 | 12000 | N | Pond 20 | |

*Species abbreviations: Ambystoma macrodactylum AMMA; Ambystoma tigrinum AMTI; Bufo boreas BUBO; Bufo cognatus BUCO, Bufo woodhousii BUWO; Chrysemys picta CHPI; Coluber constrictor COCO; Pseudacris triseriata PSTR; Rana luteiventris RALU (= Rana pretiosa RAPR); Rana pipiens RAPI; Spea bombifrons SPBO; Thamnophis elegans THEL; Thamnophis radix THRA; Thamnophis sirtalis THIS.

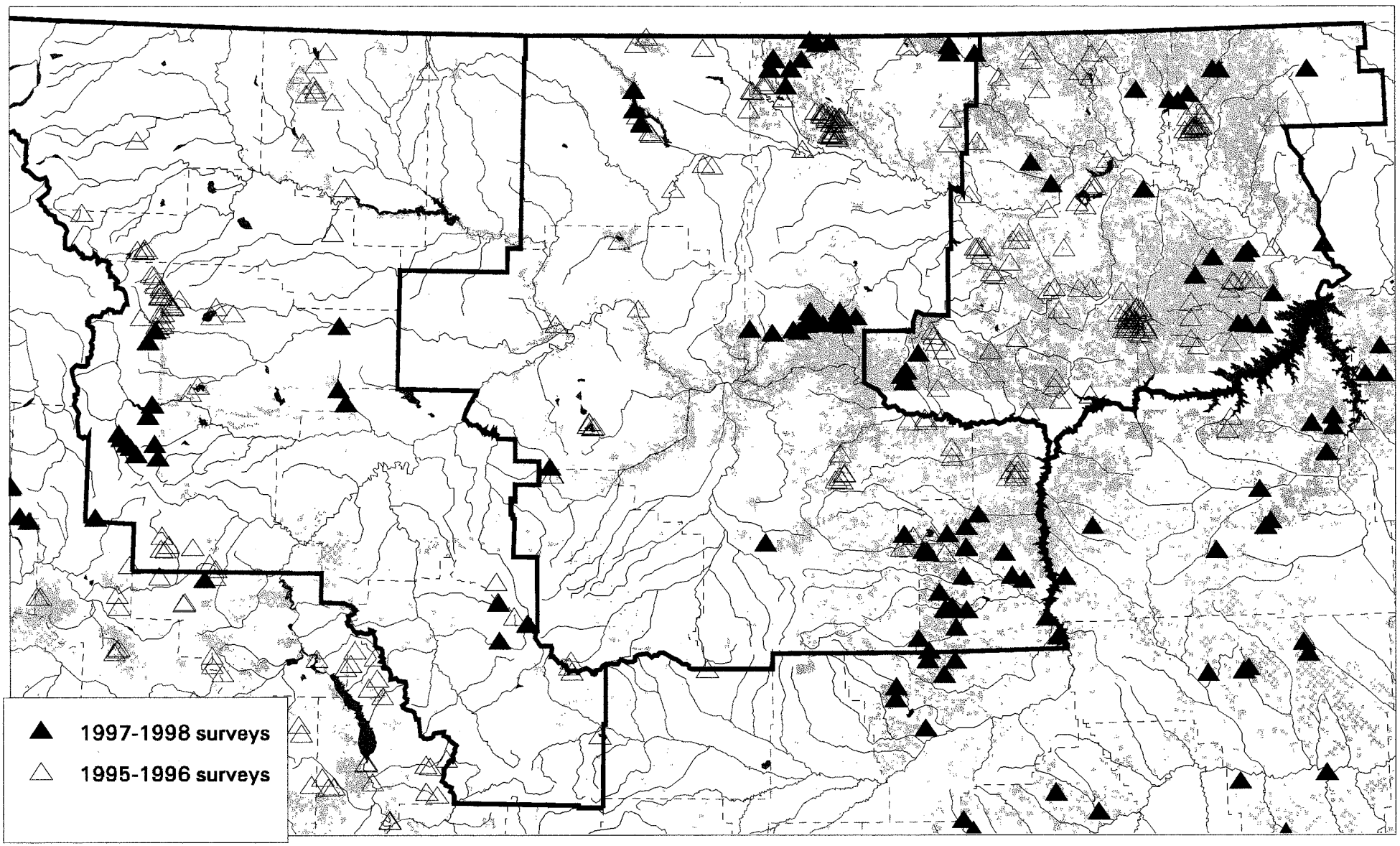
# APPENDIX 2.

## Mapped records of

## amphibians and reptile observations

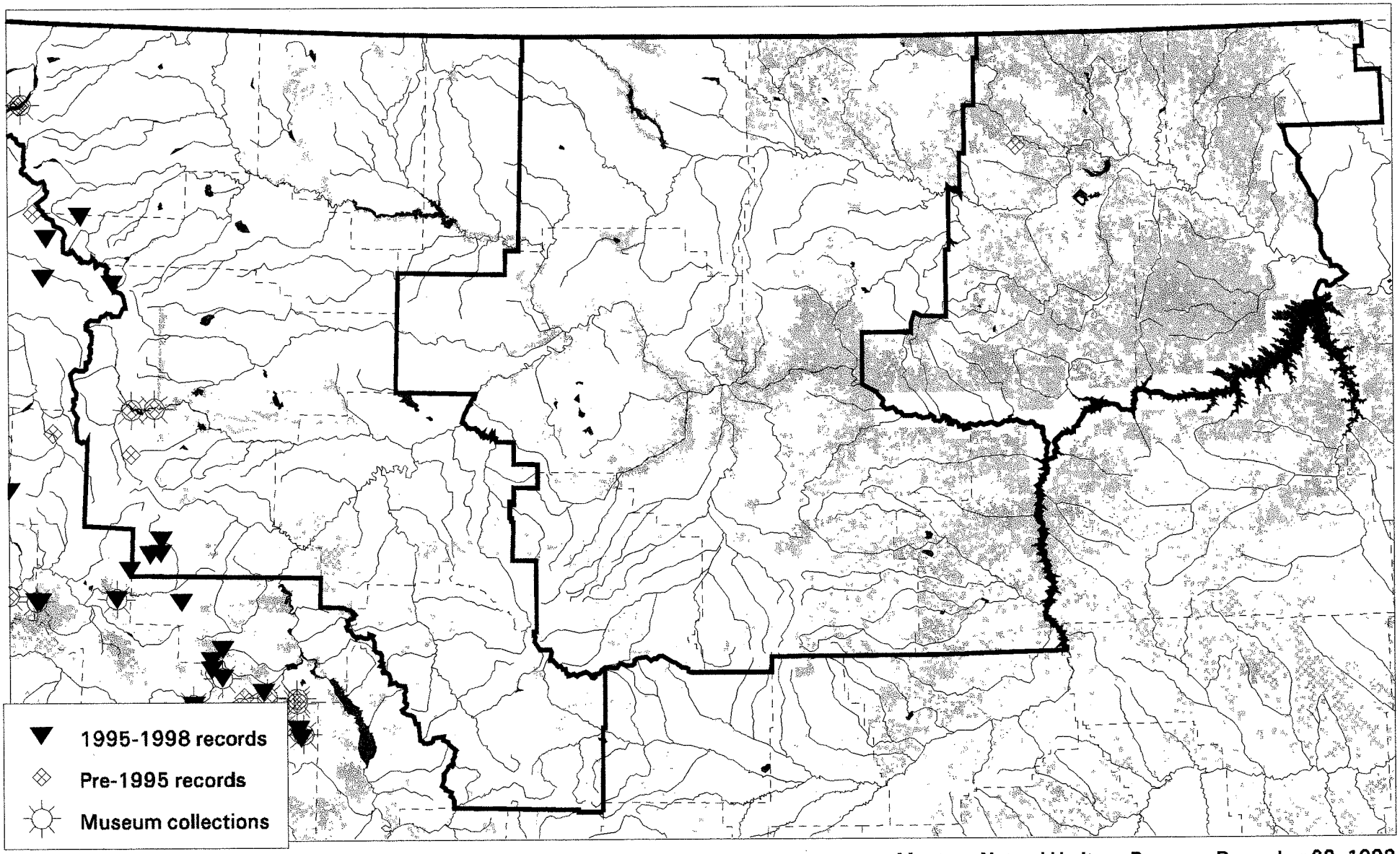
## in the Lewistown district.

# Amphibian & Reptile Survey Locations, Lewistown District, BLM, 1995-1998



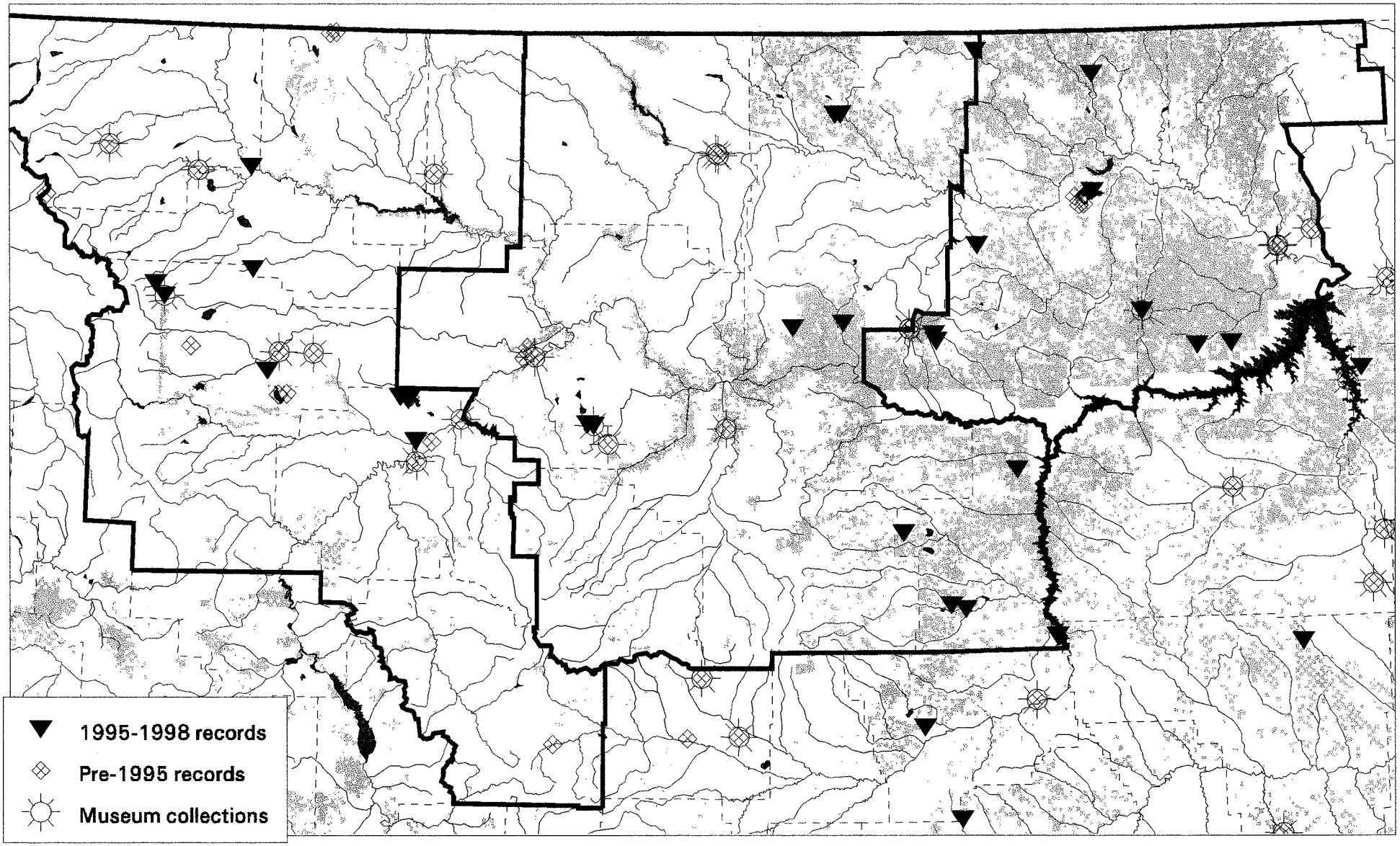

Montana Natural Heritage Program, December 22, 1998

# Observations of Ambystoma macrodactylum, Lewistown District, BLM, 1995-1998



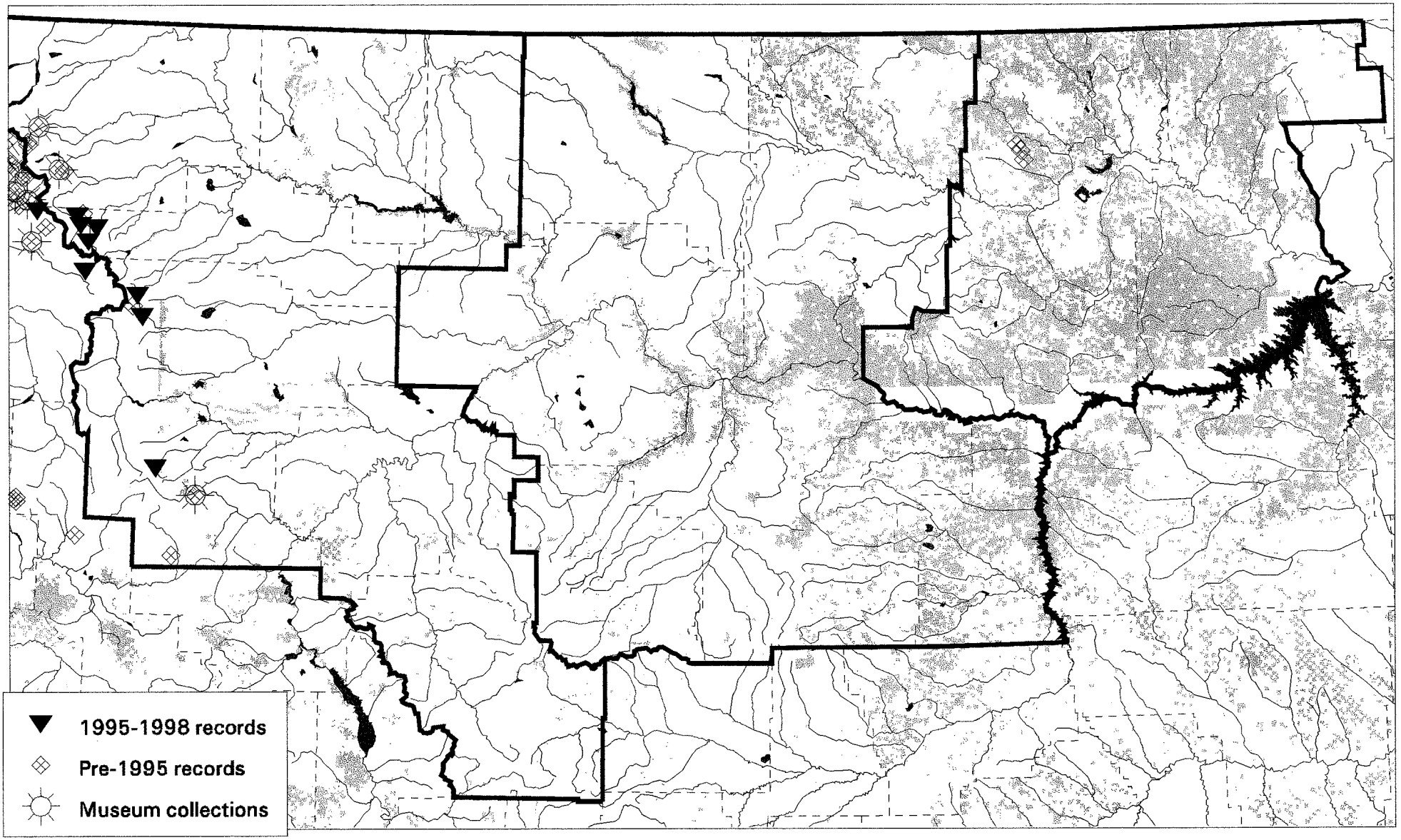

Montana Natural Heritage Program, December 22, 1998

# Observations of Ambystoma tigrinum, Lewistown District, BLM, 1995-1998



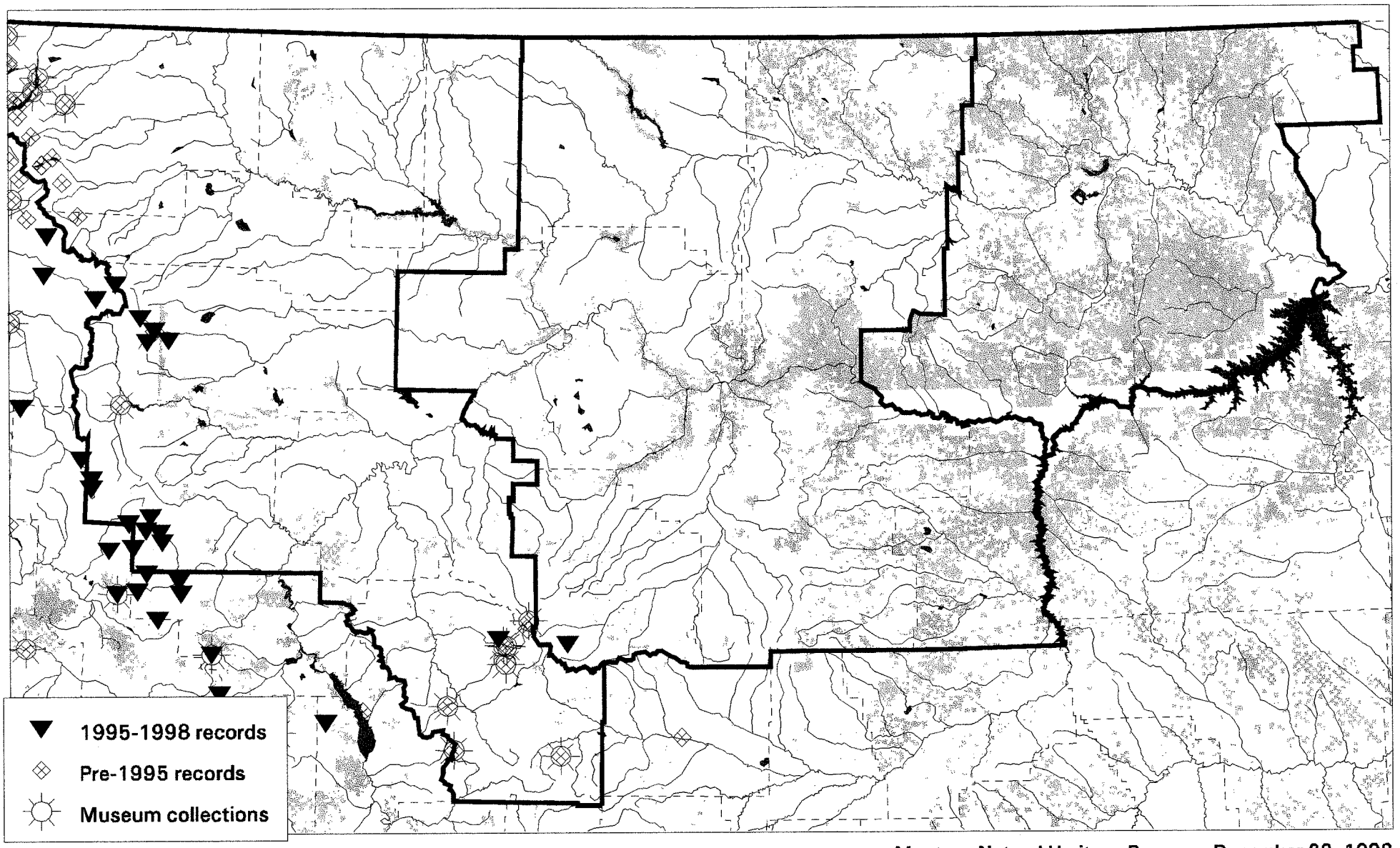

Montana Natural Heritage Program, December 22, 1998

# Observations of Ascaphus truei, Lewistown District, BLM, 1995-1998



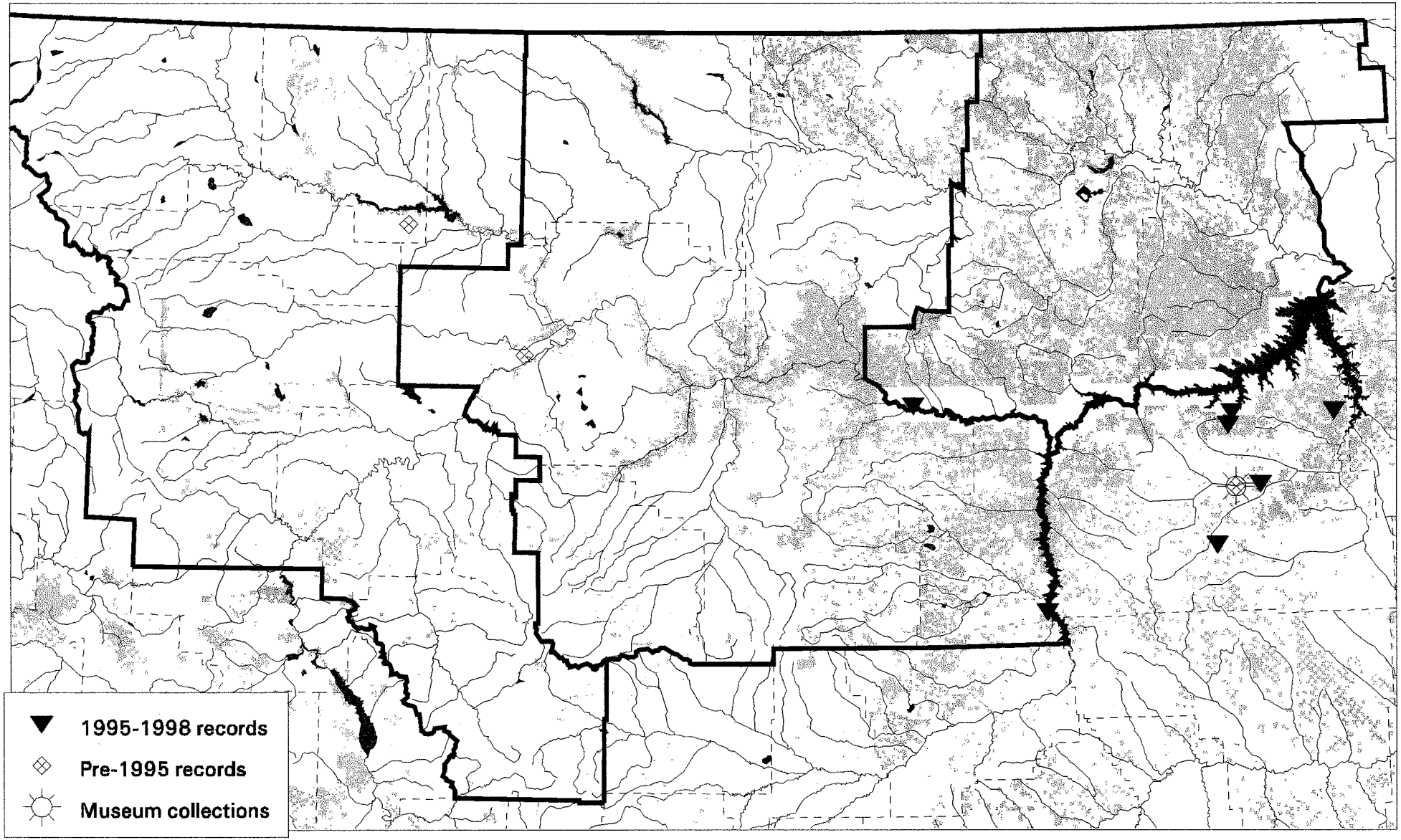

Montana Natural Heritage Program, December 22, 1998

# Observations of Bufo boreas, Lewistown District, BLM, 1995-1998



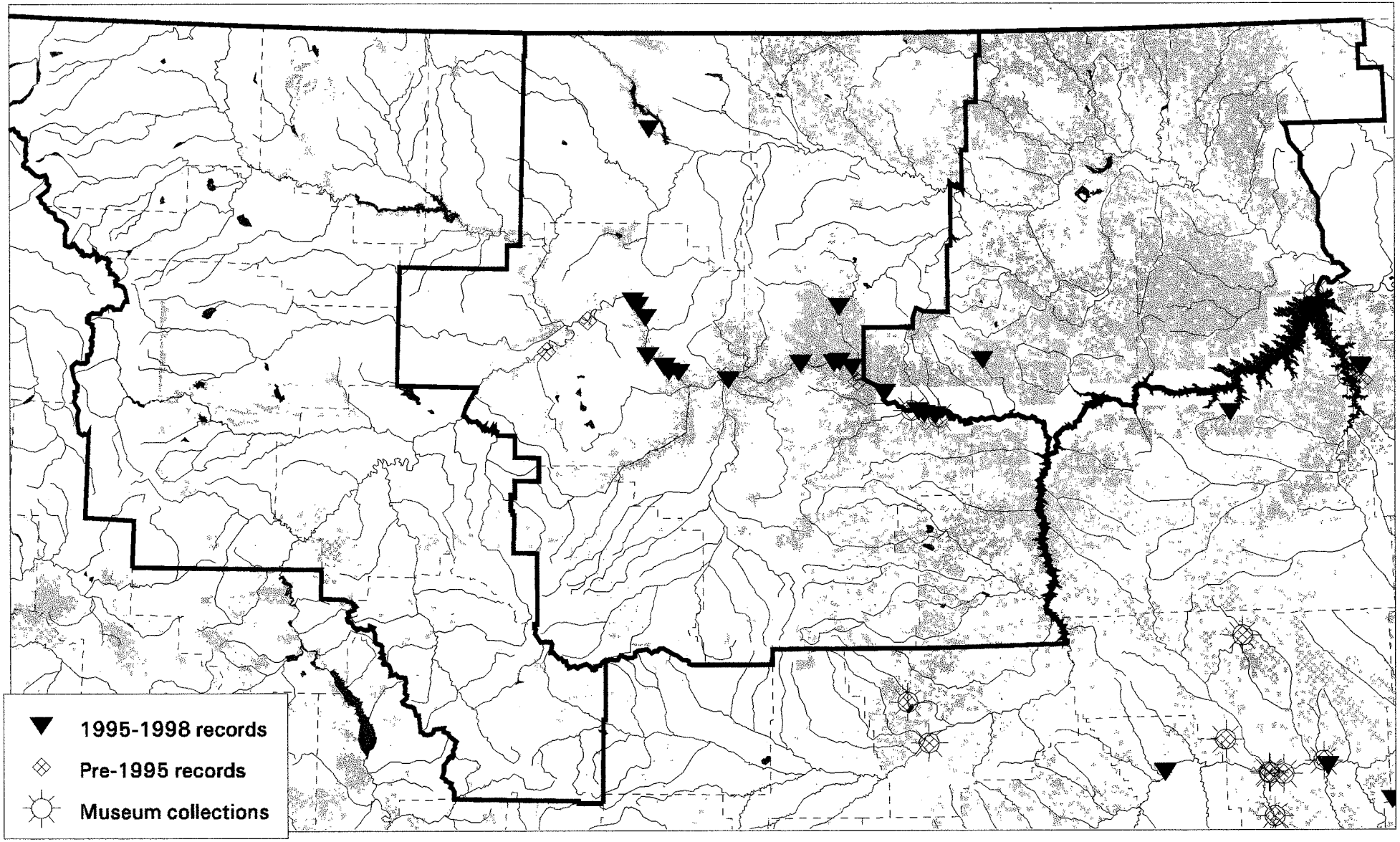

Montana Natural Heritage Program, December 22, 1998

# Observations of Bufo cognatus, Lewistown District, BLM, 1995-1998



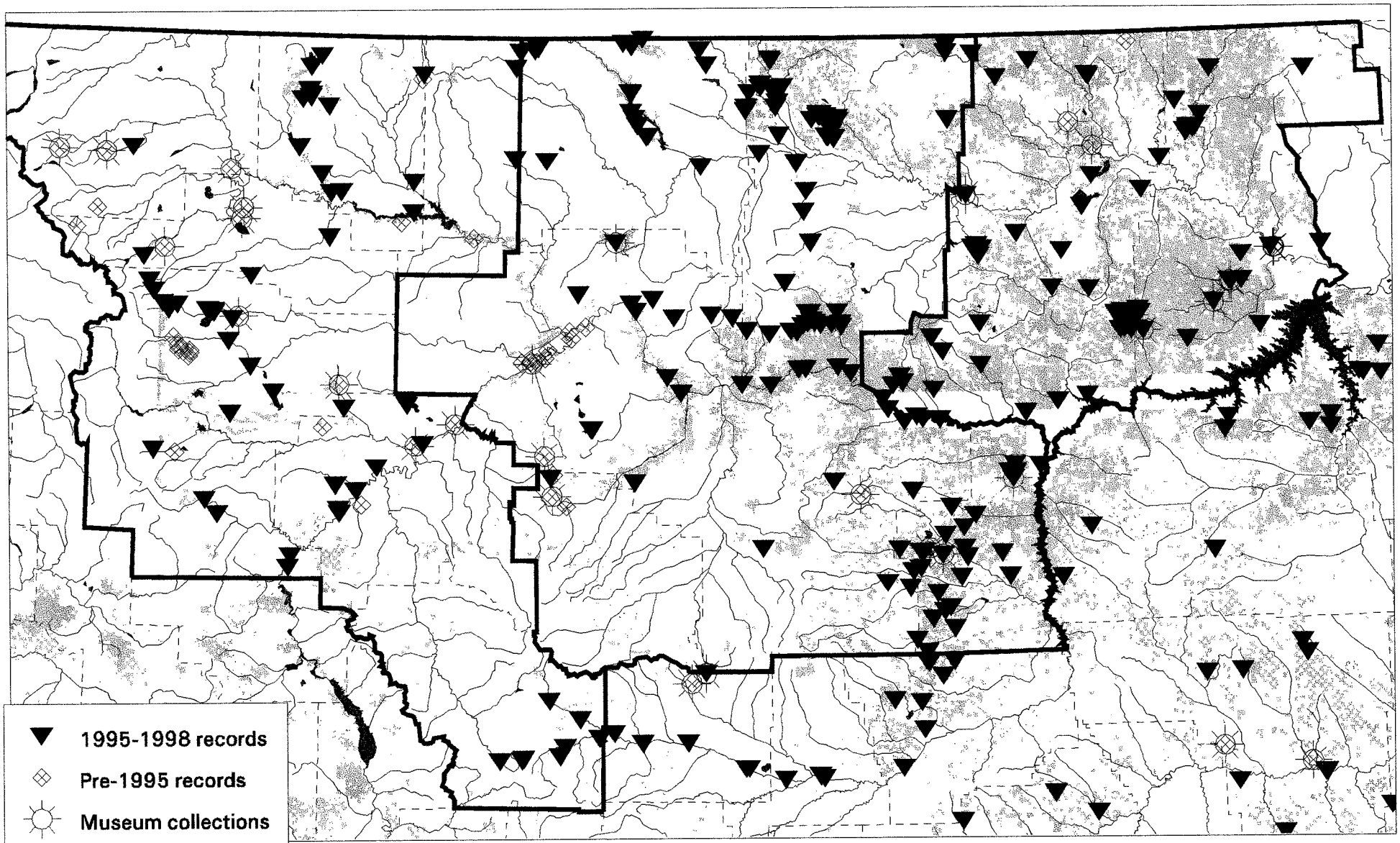

Montana Natural Heritage Program, December 22, 1998

# Observations of Bufo woodhousii, Lewistown District, BLM, 1995-1998



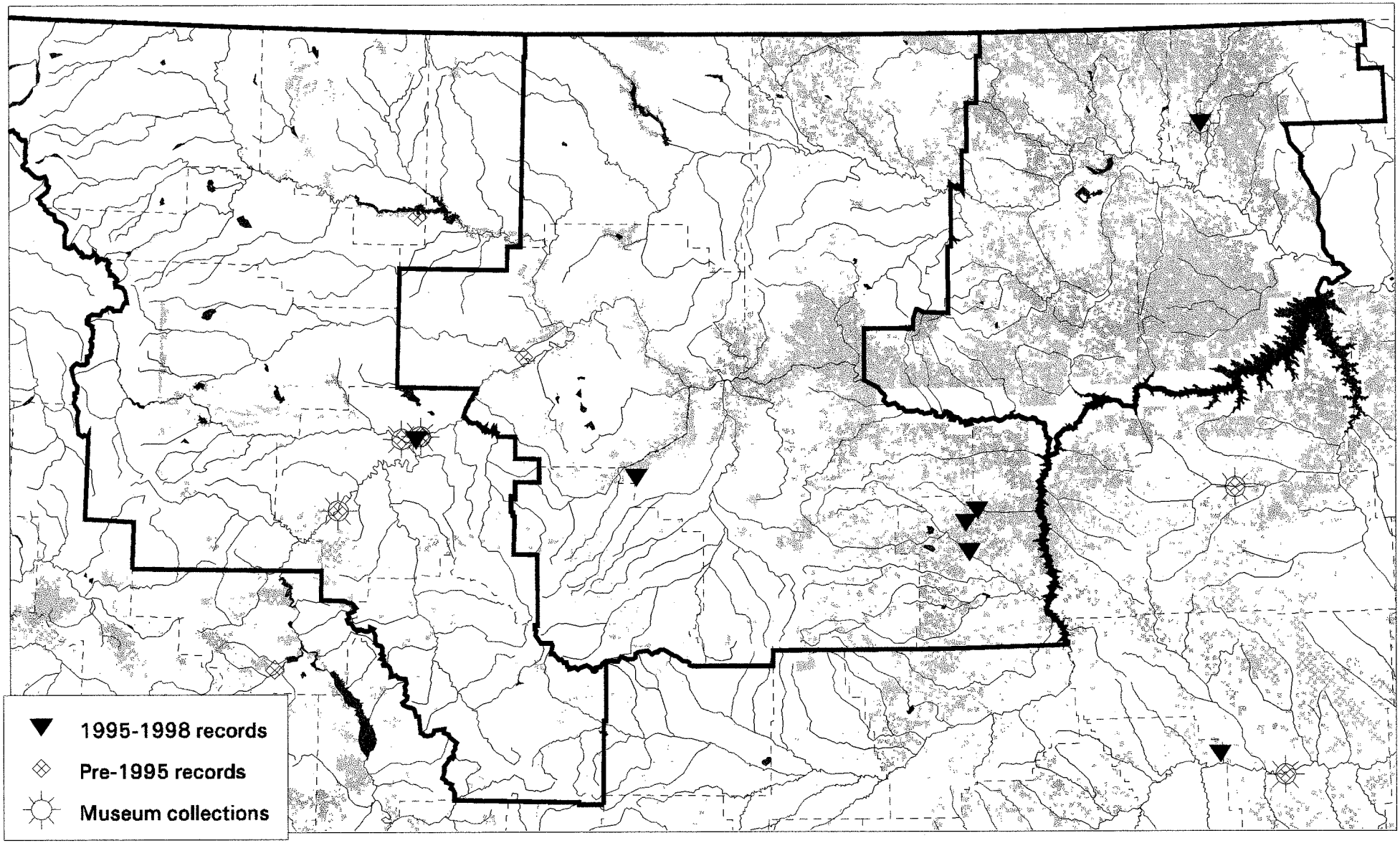

Montana Natural Heritage Program, December 22, 1998

# Observations of Pseudacris triseriata, Lewistown District, BLM, 1995-1998



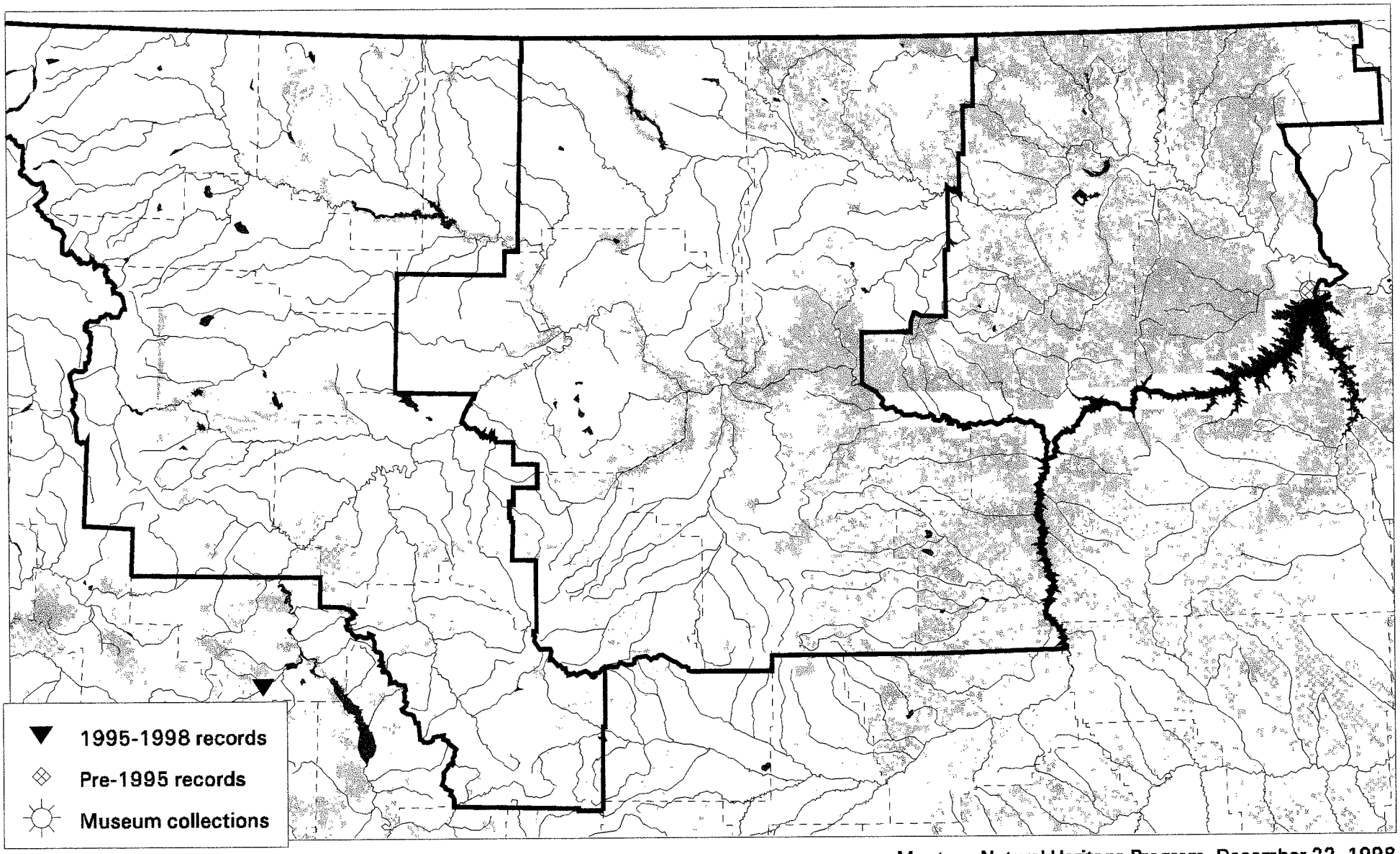

Montana Natural Heritage Program, December 22, 1998

# Observations of Spea bombifrons, Lewistown District, BLM, 1995-1998



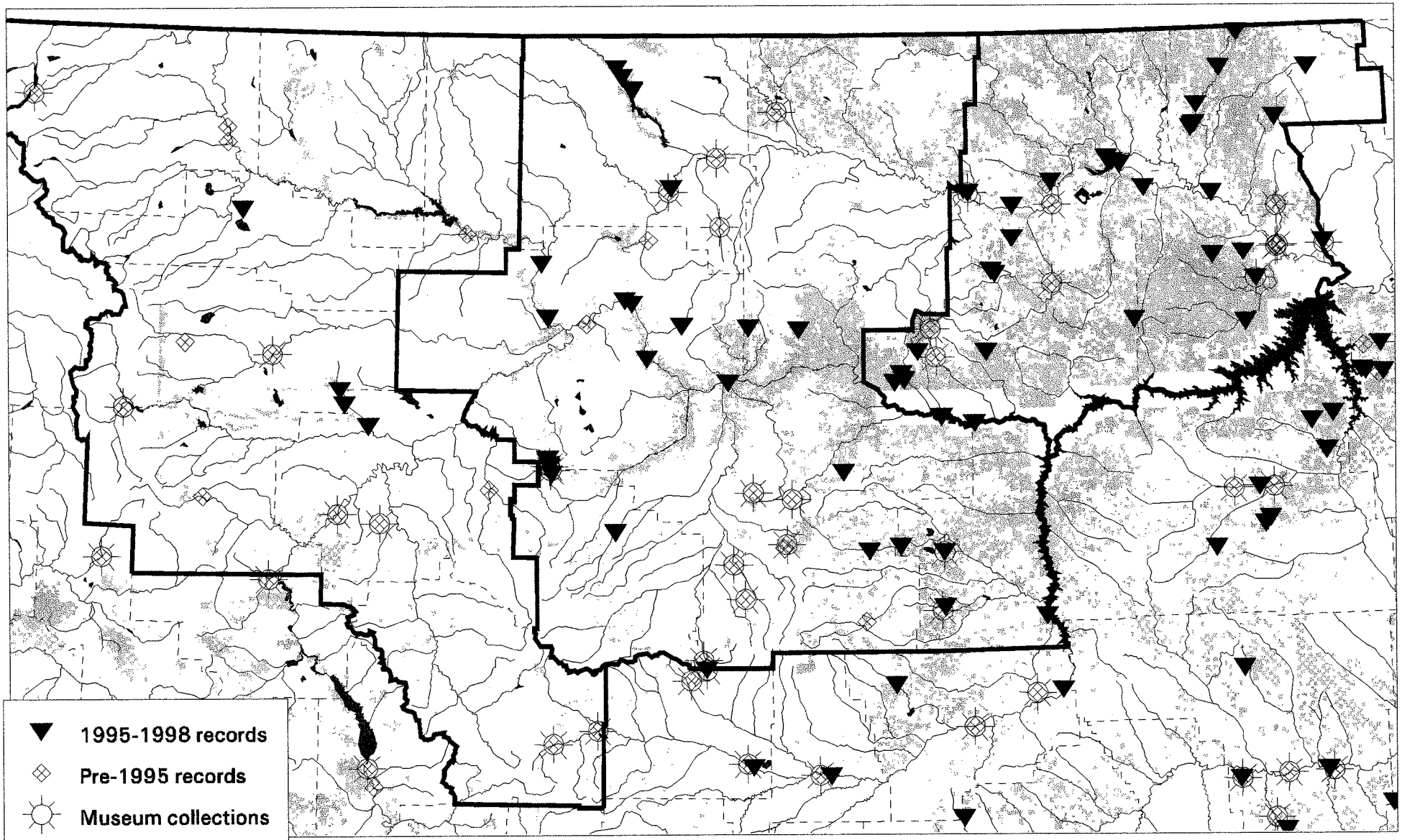

Montana Natural Heritage Program, December 22, 1998

# Observations of Rana catesbeiana, Lewistown District, BLM, 1995-1998



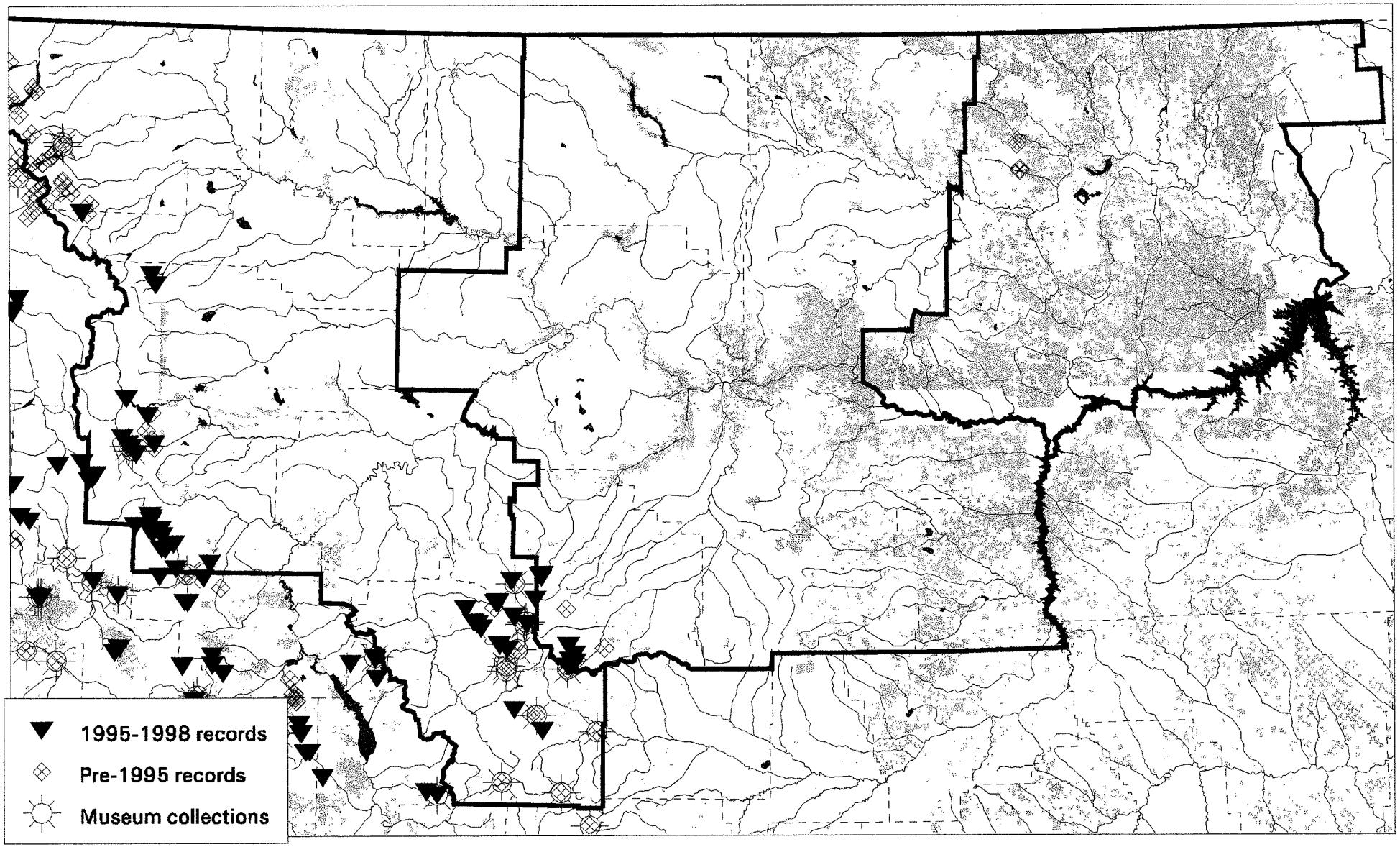

Montana Natural Heritage Program, December 22, 1998

# Observations of Rana pipiens, Lewistown District, BLM, 1995-1998



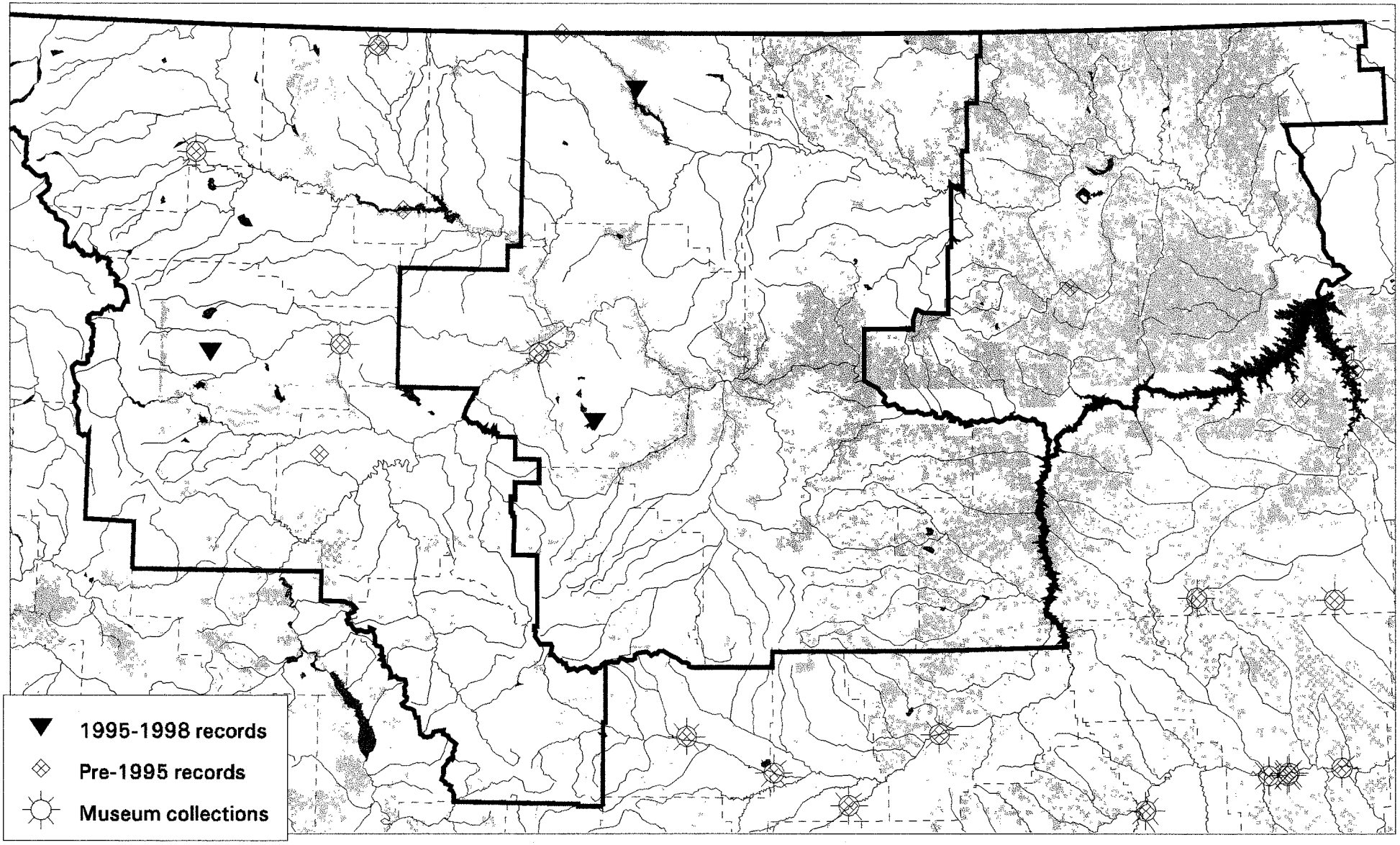

Montana Natural Heritage Program, December 22, 1998

# Observations of Rana luteiventris, Lewistown District, BLM, 1995-1998



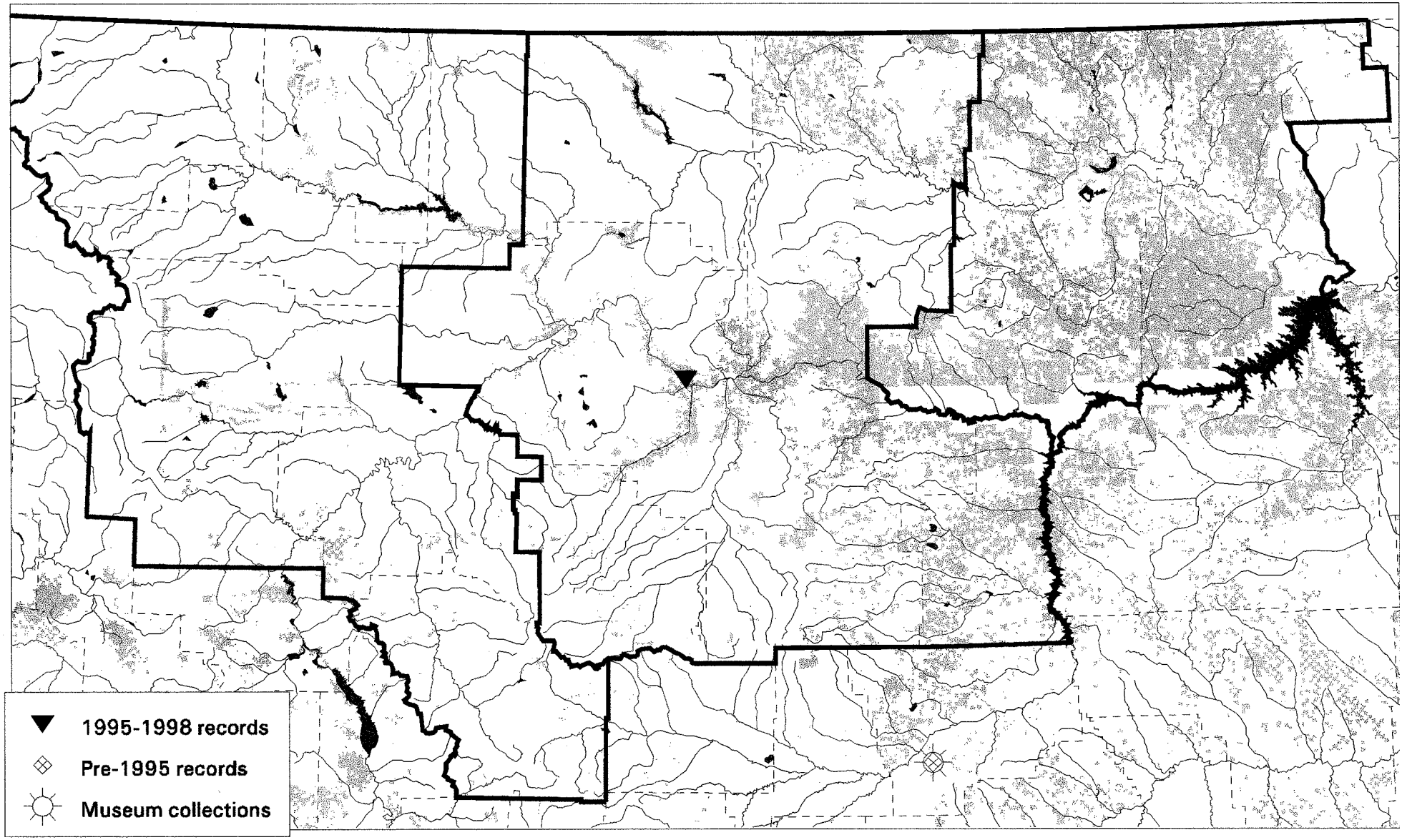

Montana Natural Heritage Program, December 22, 1998

# Observations of Phrynosoma hernandesi, Lewistown District, BLM, 1995-1998



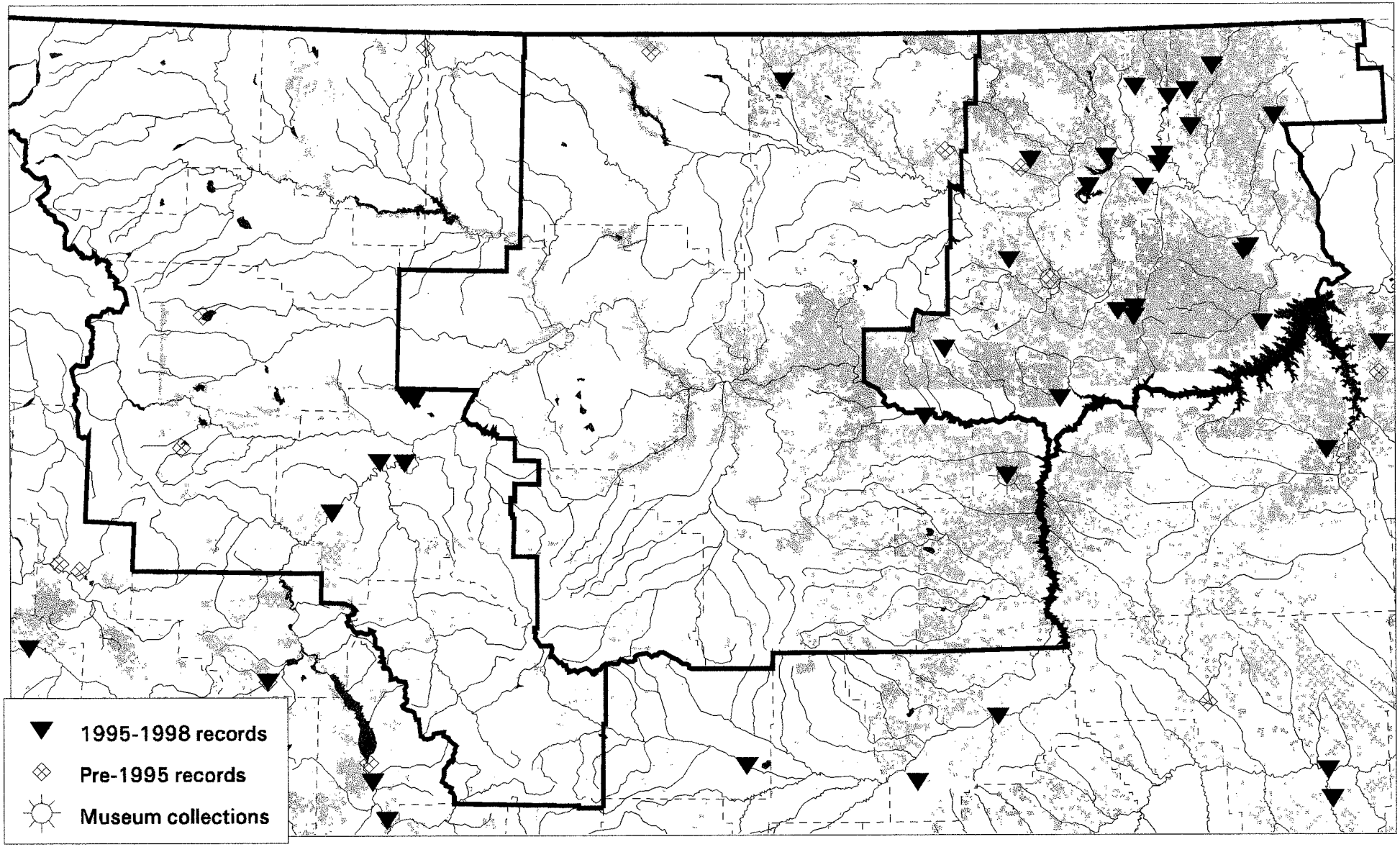

Montana Natural Heritage Program, December 22, 1998

# Observations of Sceloporus graciosus, Lewistown District, BLM, 1995-1998



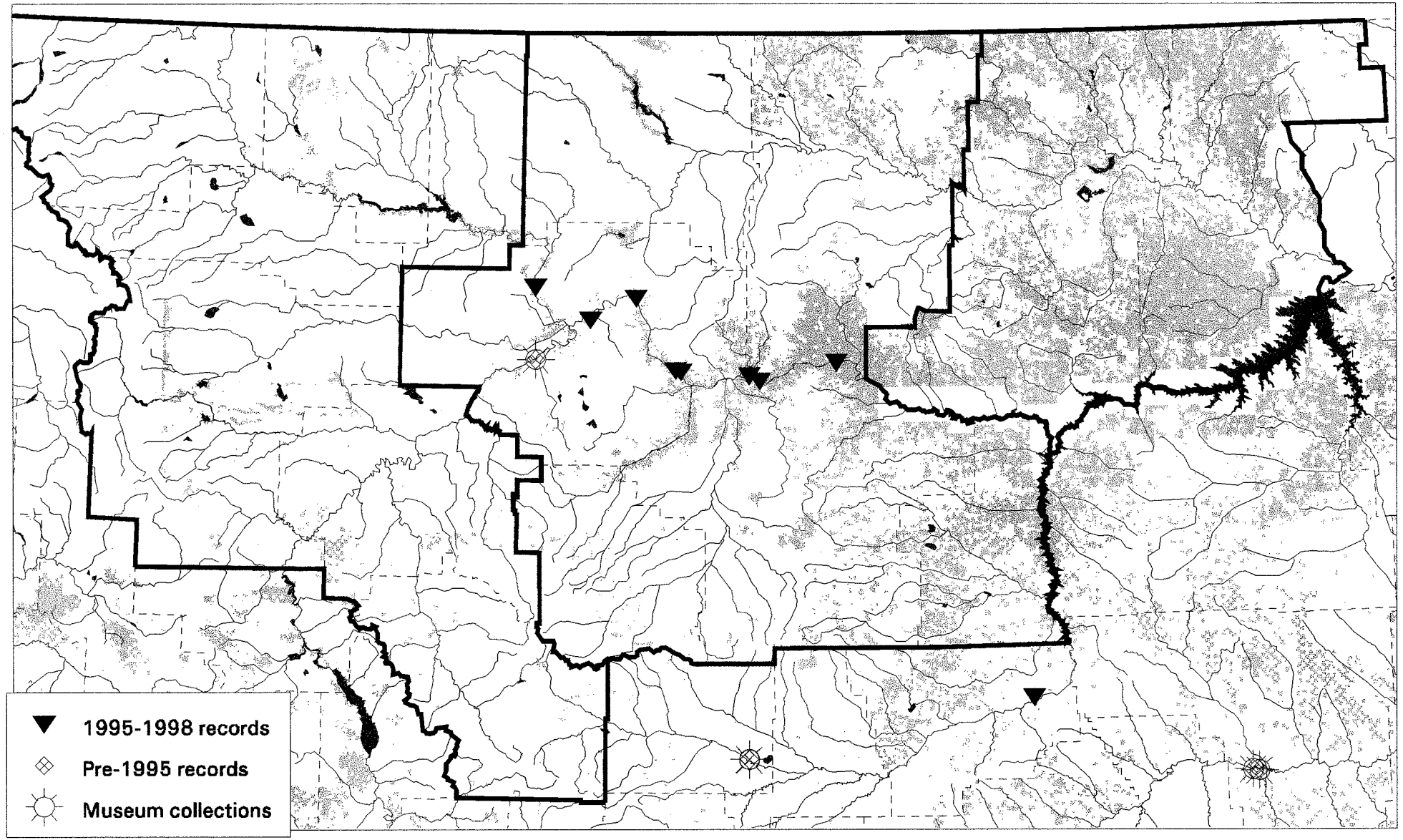

Montana Natural Heritage Program, December 22, 1998

# Observations of Chrysemys picta, Lewistown District, BLM, 1995-1998



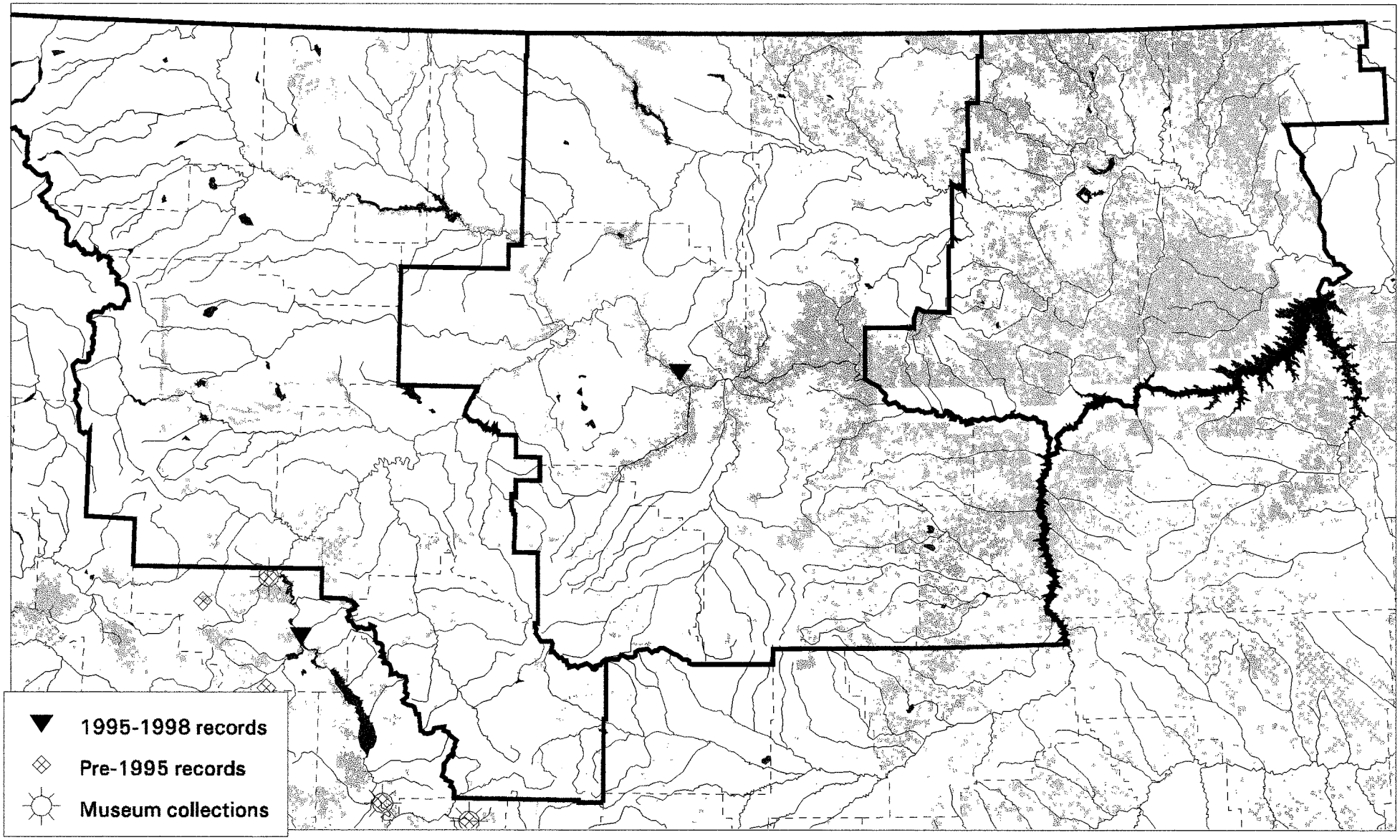

Montana Natural Heritage Program, December 22, 1998

# Observations of Trionyx spiniferus, Lewistown District, BLM, 1995-1998



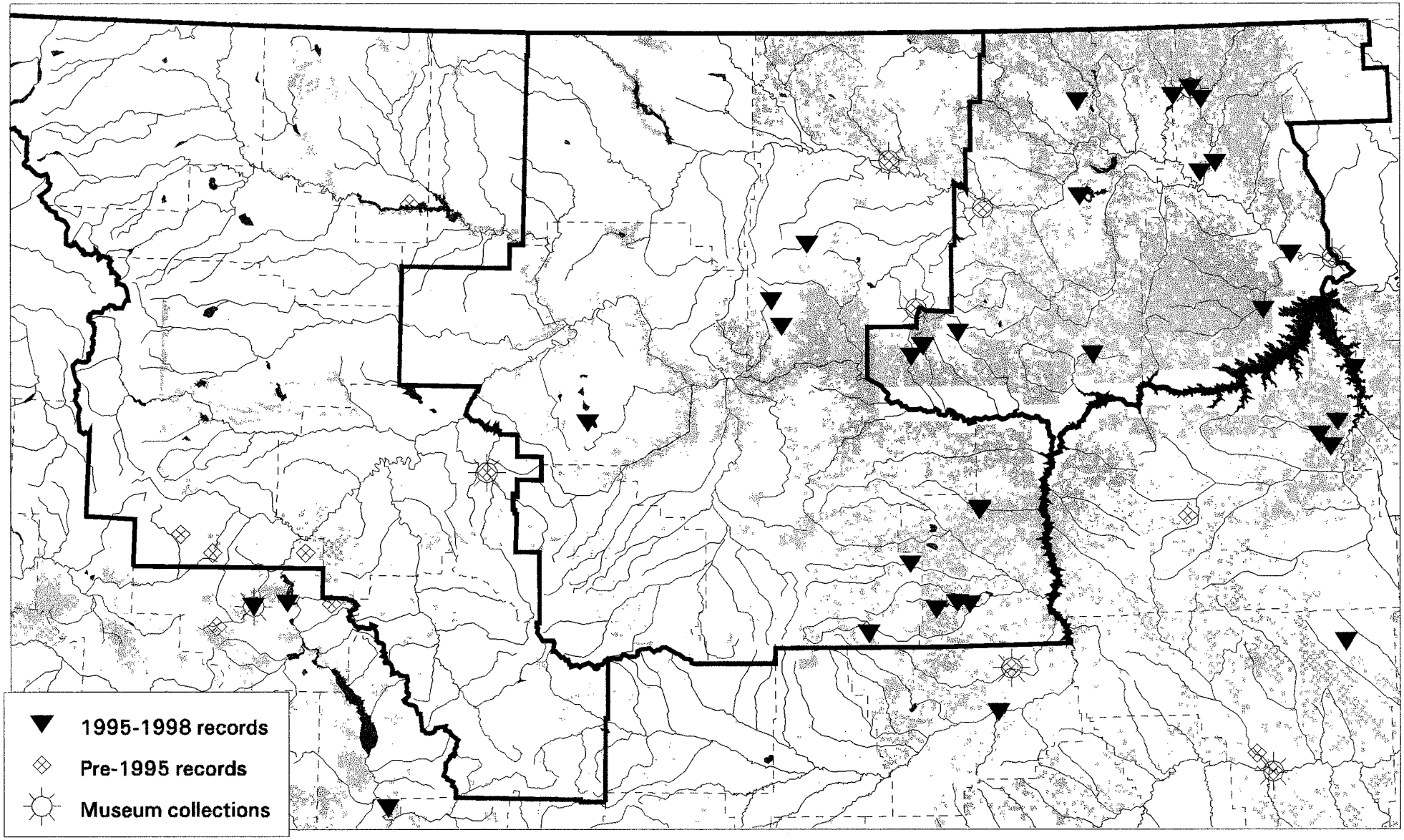

Montana Natural Heritage Program, December 22, 1998

# Observations of Charina bottae, Lewistown District, BLM, 1995-1998



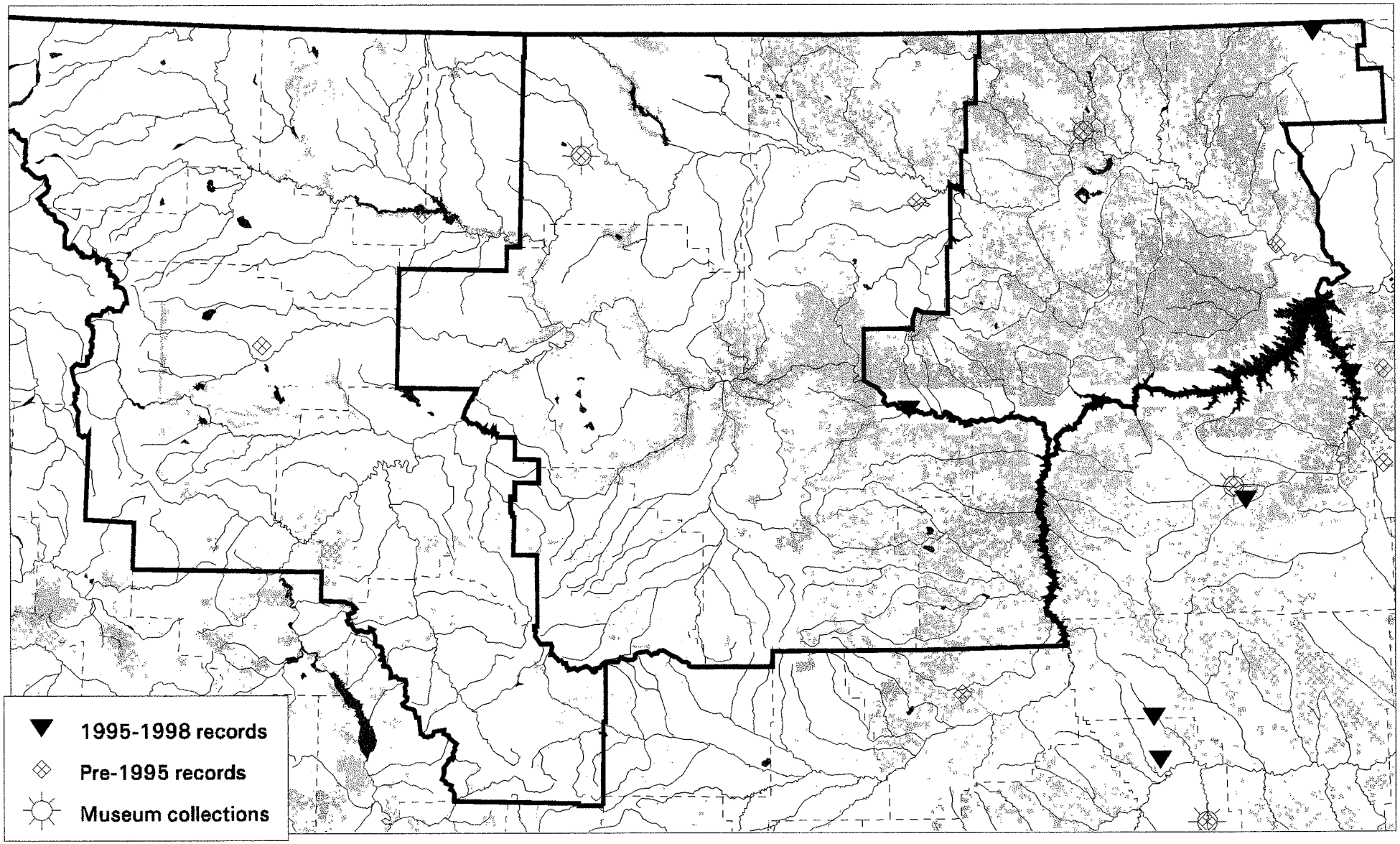

Montana Natural Heritage Program, December 22, 1998

# Observations of Coluber constrictor, Lewistown District, BLM, 1995-1998



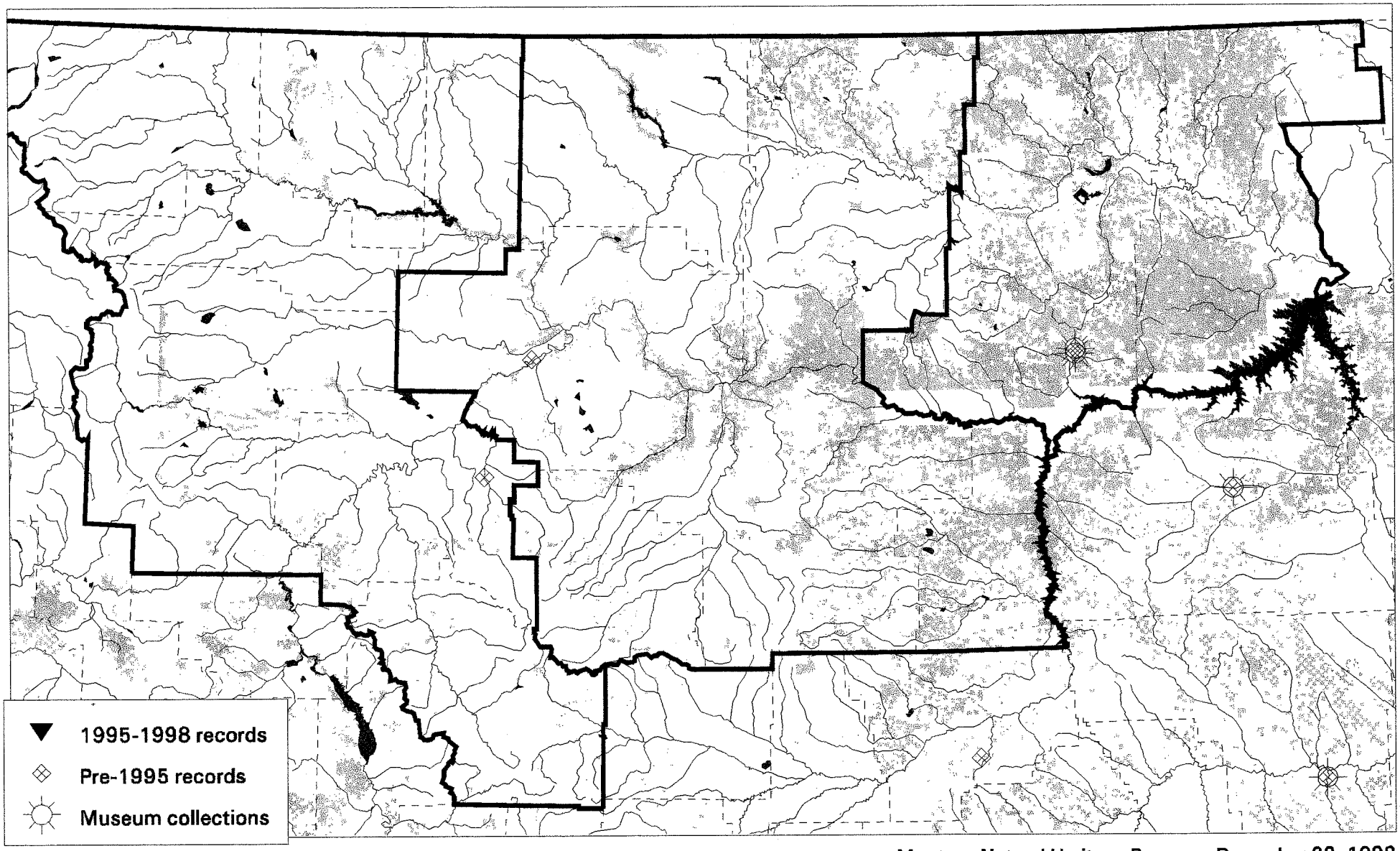

Montana Natural Heritage Program, December 22, 1998

# Observations of Heterodon nasicus, Lewistown District, BLM, 1995-1998



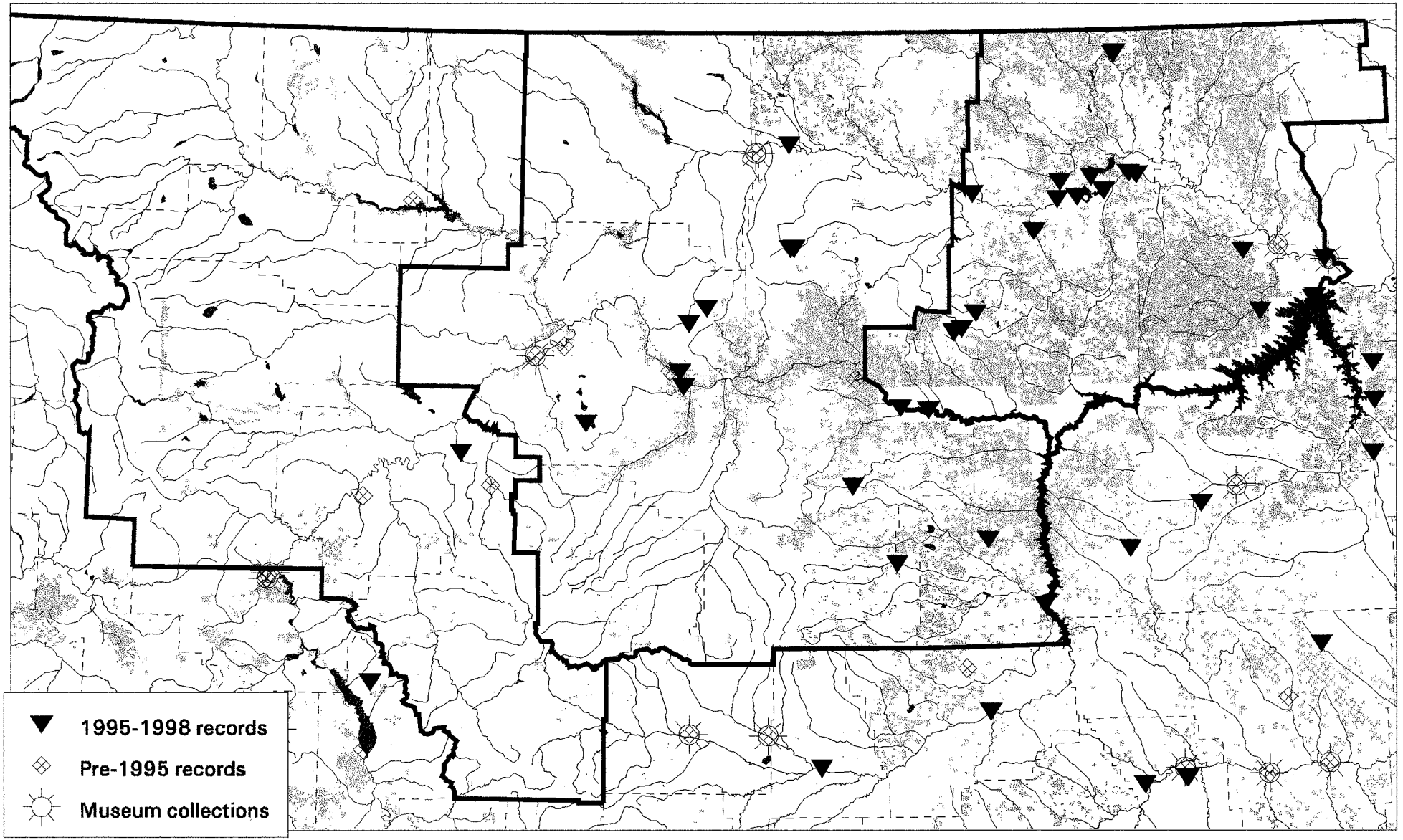

Montana Natural Heritage Program, December 22, 1998

# Observations of Lampropeltis triangulum, Lewistown District, BLM, 1995-1998



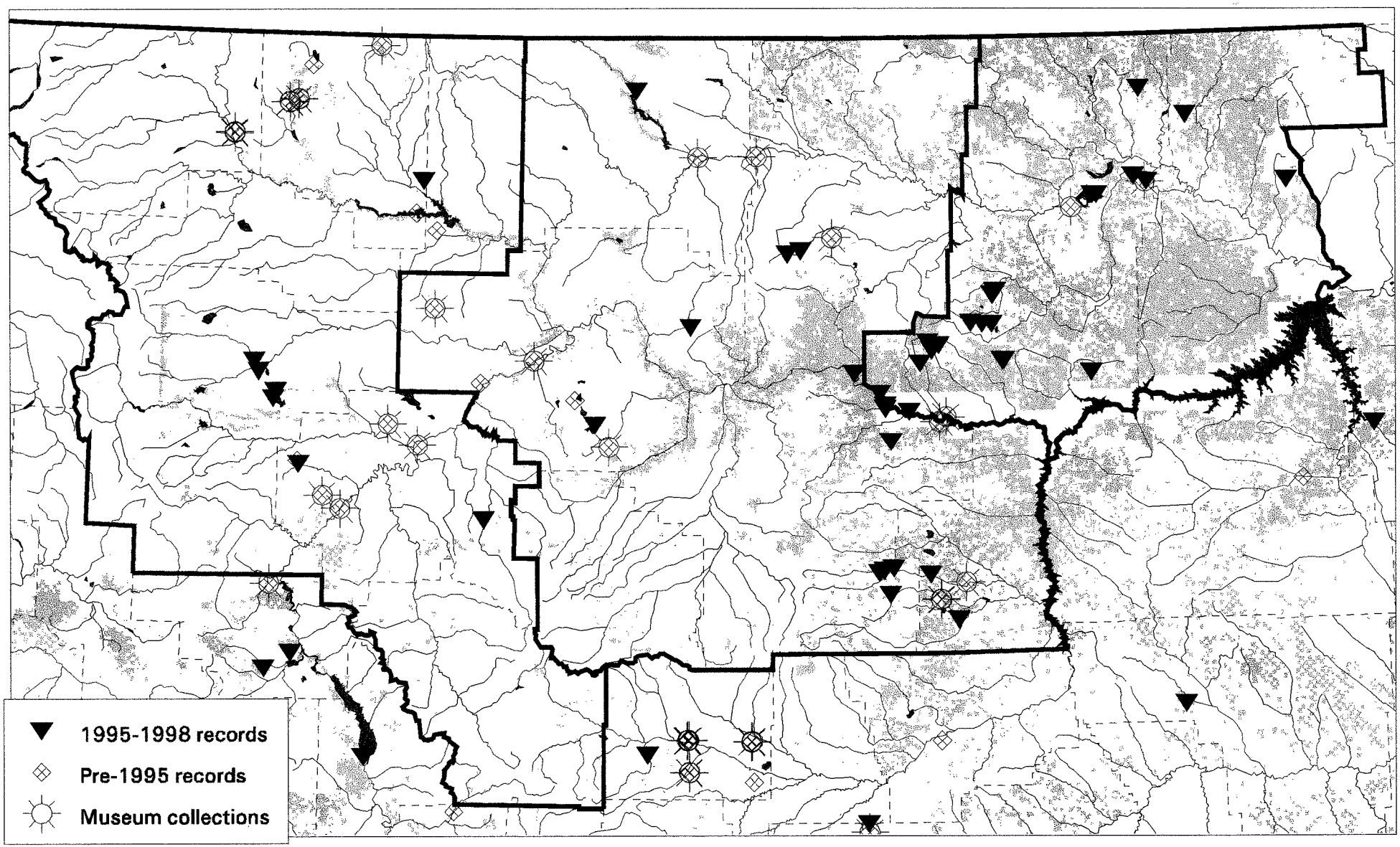

Montana Natural Heritage Program, December 22, 1998

# Observations of Pituophis catenifer, Lewistown District, BLM, 1995-1998



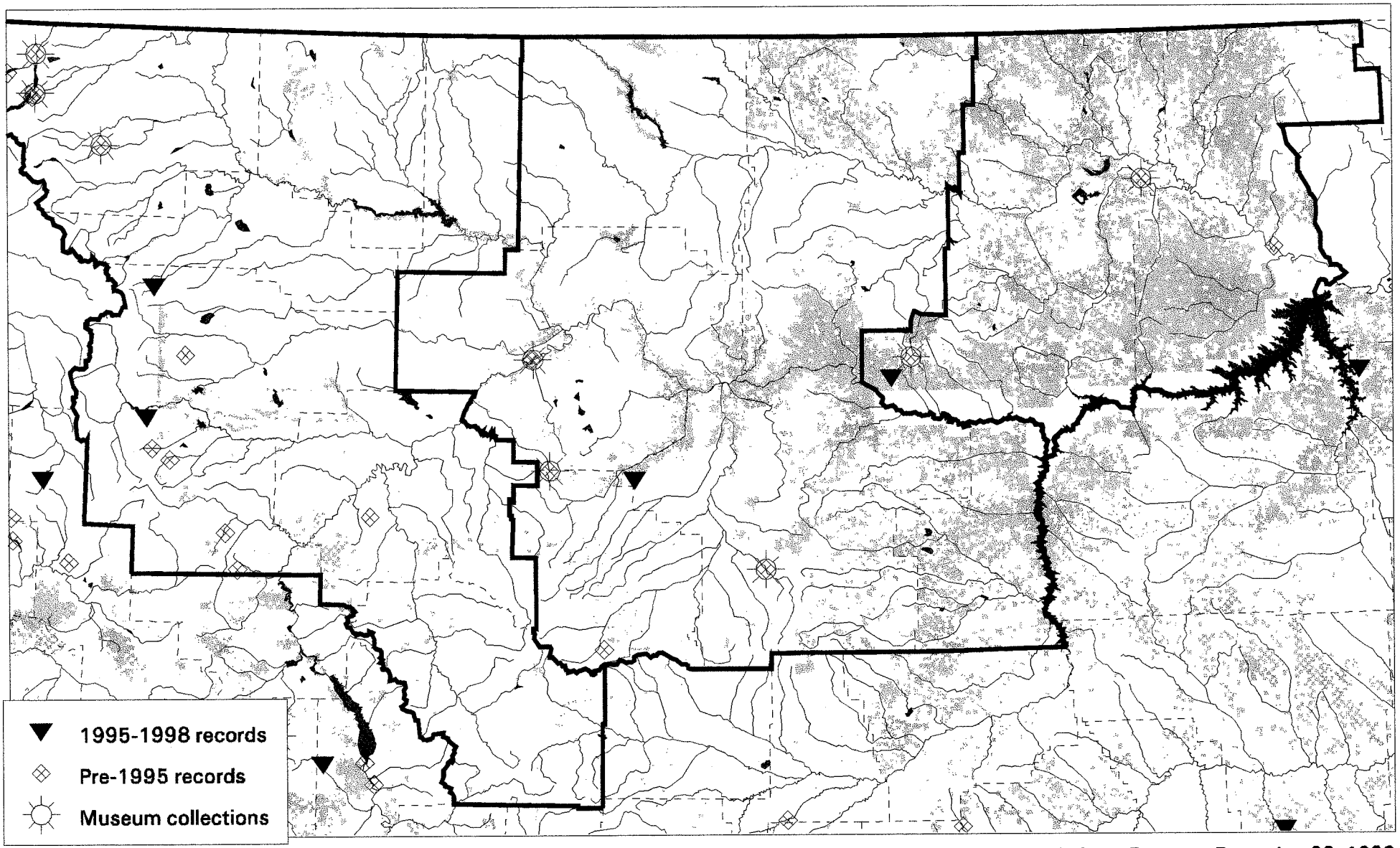

Montana Natural Heritage Program, December 22, 1998

# Observations of Crotalus viridis, Lewistown District, BLM, 1995-1998



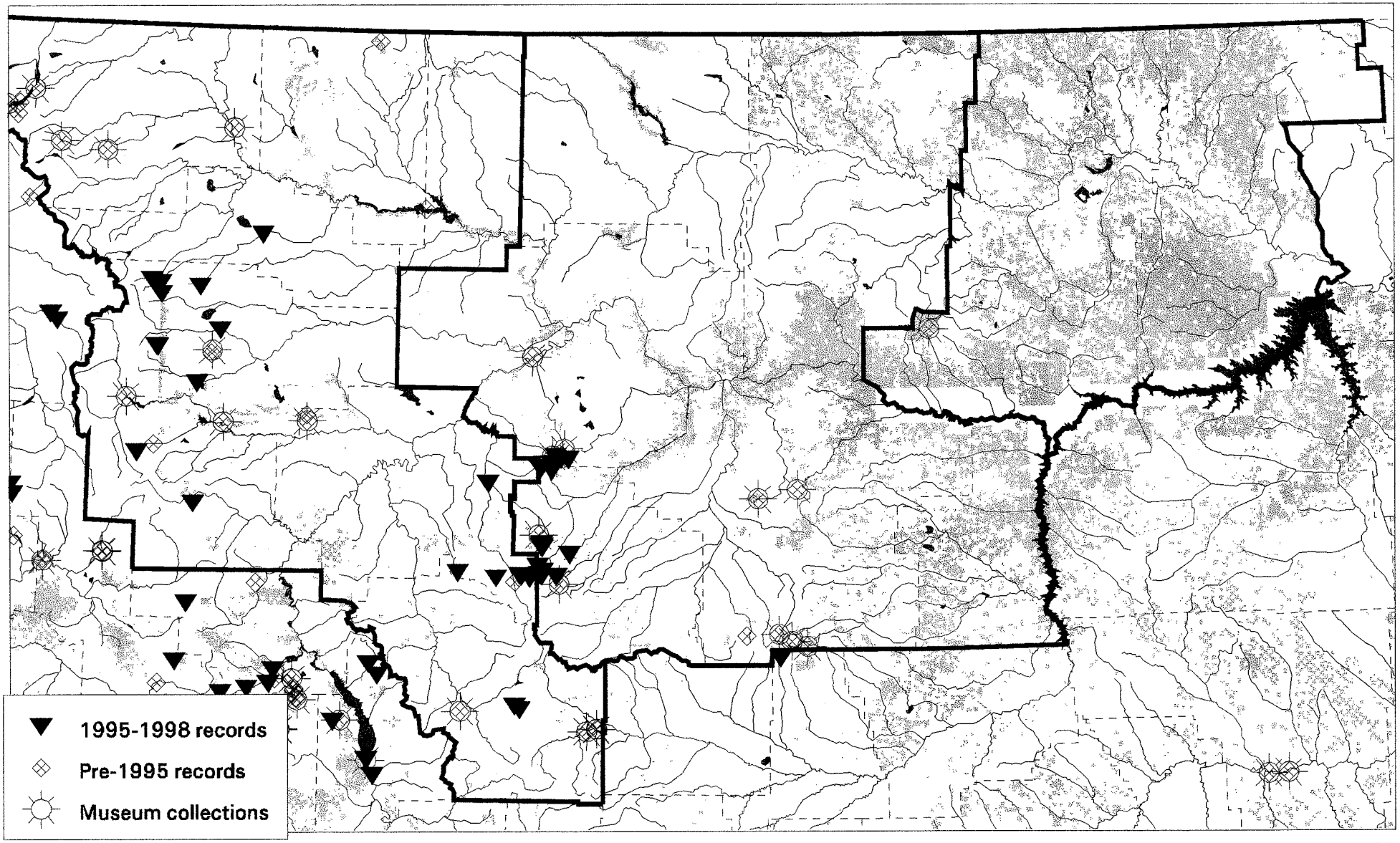

Montana Natural Heritage Program, December 22, 1998

# Observations of Thamnophis sirtalis, Lewistown District, BLM, 1995-1998



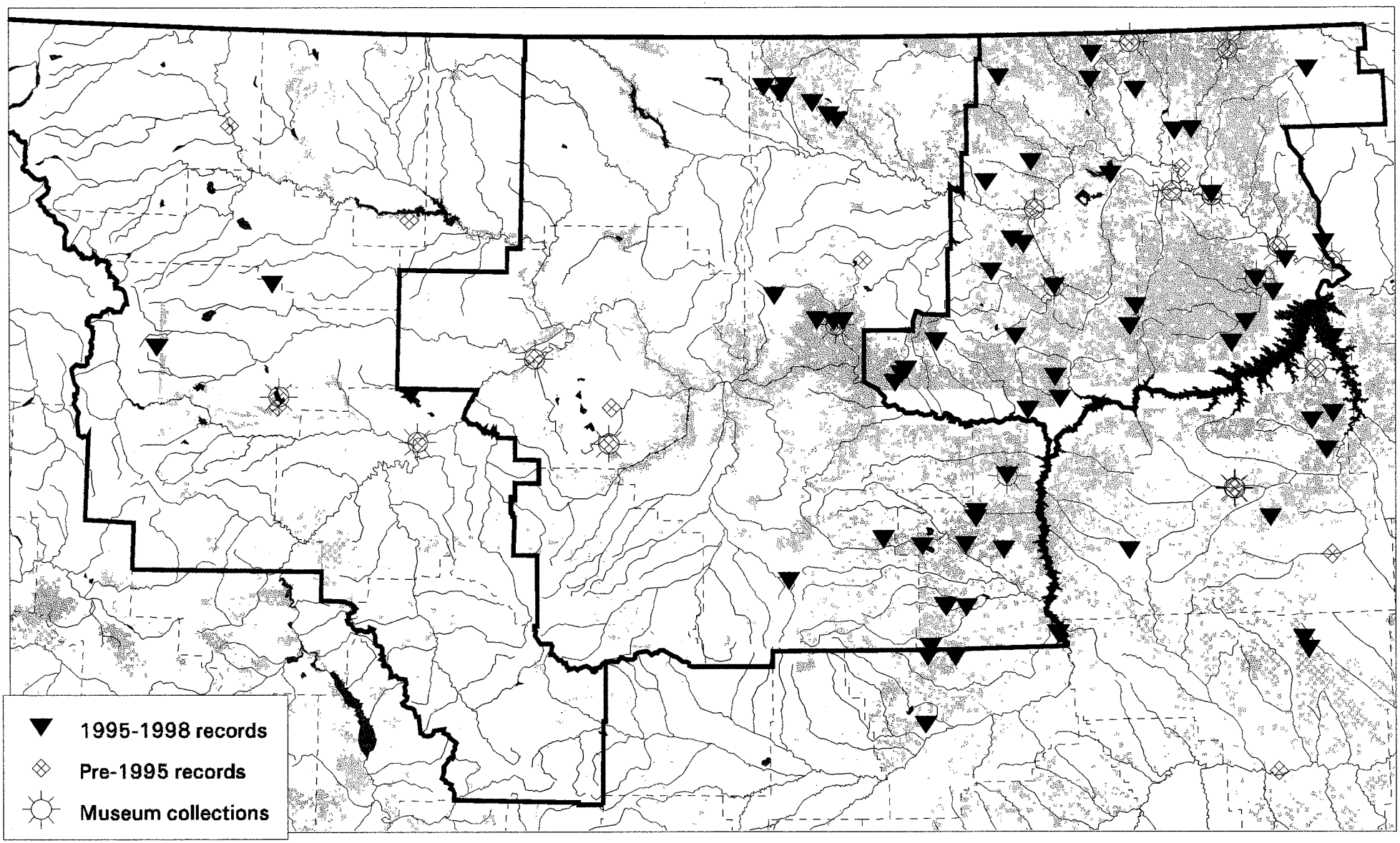

Montana Natural Heritage Program, December 22, 1998

# Observations of Thamnophis elegans, Lewistown District, BLM, 1995-1998




Montana Natural Heritage Program, December 22, 1998

# Observations of Thamnophis radix, Lewistown District, BLM, 1995-1998




Montana Natural Heritage Program, December 22, 1998